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VOL. II.—30TH YEAR. SYDNEY, SATURDAY, JULY 31, 1943. No. 5.

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ANÆSTHESIA UNDER WARTIME CONDITIONS.[1]

By J. F. McCULLOCH,
Major, Australian Army Medical Corps.

I should like to say at the outset how gratified I am to be asked to address, even by proxy, this august gathering. I am very sorry, but at the same time more than a little relieved, not to be here in person. Before beginning my paper, I should like to say just two things more. The first is that those who are expecting stirring tales about narcosis amid dropping bombs or the induction of anæsthesia to the accompaniment of machine-gun fire are doomed to disappointment. Nothing like that happened in my life; but I hope to describe briefly the sort of work done during the two years my unit was in Palestine. The second remark is also explanatory. This paper is being written at short notice while I am waiting to be sent a long way north. I have had little time or opportunity therefore to refer to journals or to consult my records, which, owing to some caprice on the part of army transport, are probably lying on a hitherto unexplored region of the Nullarbor Plain in transit from Western Australia.

The Australian general hospital of which I had the honour to be a member, after a brief but agitating period in camp, sailed with the Sixth Division, or part of it, in January, 1940. The trip was quite uneventful, and is mentioned only to describe the first anæsthetic given by me in the Australian Imperial Force abroad; it was for a dental extraction. This was done in the ship's hospital, and the other members of the unit seemed to regard it as an after-dinner show to relieve the tedium of ship-board travel. The conditions were all that an anæsthetist dreads—a hot, stuffy cabin with far too many people in it, a patient with a neck like a bull and physical development to match, who smoked a great deal, and was rather frightened. The equipment was very sketchy, consisting of a battered Schimmelbusch mask, ethyl chloride and some ether of doubtful vintage. No physiological changes seemed to take place under the mask for an unconscionable time, and everyone, including the patient, grew rather restive. Some of the onlookers were unable to resist the temptation to be helpful. Eventually, in spite of difficulties, the patient was put to sleep and the extraction done. I staggered out, wringing with sweat and quite exhausted, from one of the most difficult anæsthetics I can ever remember giving.

We arrived in Palestine on February 14, 1940, to find what might be described as a token hospital. There were tents for the personnel, about three huts, and nothing much else. We opened for patients in a hospital marquee, large, a few weeks later, and about the middle of April began to do some surgery in the corner of a large mess hut which had been built since our arrival. The difficulties were many. There was inadequate equipment in every way, and all the sterilizing had to be done on one or two "Primuses", which were apt to behave capriciously at the wrong moment; there was no anæsthetic mask at the beginning except one made by me out of a piece of wire, and there were no artificial airways; they were not procurable in Palestine. Patients were carried to and from the operating theatre by ambulance or on stretchers, often a long way. The season was that of khamsins—hot, dry winds, which used to make one feel shrivelled up, and must have been very trying for the patients. There was at this stage very little work, and only urgent "emergencies" were dealt with. Ethyl chloride and ether anæsthesia was used almost exclusively, and for the rare endotracheal administrations, a Flagg's can was employed attached to a Magill tube passed through the nose. I ought, perhaps, to explain to city-dwelling doctors that this is a very simple but superlatively useful piece of apparatus, which can be made out of a medium-sized cylindrical cigarette tin or jam tin. A lateral opening is made one and a half or two inches from the bottom and a metal tube

[1] Read on behalf of Major McCulloch by Major S. V. Marshall at a meeting of the New South Wales Branch of the British Medical Association on April 29, 1943.

is fixed to it. A piece of rubber tubing connects the end of this with the Magill angle piece. The effect of this is that with a reasonable sized tube in the larynx most of the respiratory movement takes place through the can, on top of which is fixed a pad consisting of several layers of gauze. On this is poured the ether or chloroform. Flagg's can was the only means of giving endotracheal anæsthesia for at least a year.

"Rag and bottle" anæsthesia for the type of patients then being treated (physically well developed, and many of them heavy smokers) had manifold disadvantages. It was in many cases too like a survival of the fittest to be pleasant. This, and the fact that there was a high incidence of chest complications, mostly mild basal bronchitis, turned my thoughts to "Percaine", of which we did have adequate supplies in the 1:1,500 solution. I found that the routine operations were becoming more frequent and quite upsetting my preconceived ideas as to the kind of surgery one would encounter. Appendicectomies, repairs of herniæ and similar conditions were the most common. For these, spinal anæsthesia proved ideal. (The technique used was a combination of Howard Jones's and Norman Lake's.[1]) About the middle of the year we moved into the permanent operating theatre block, which had just been completed. This contained two theatres with their cleaning and sterilizing rooms, and an X-ray department and plaster room. Conditions here were much better, as the floors were tiled and running hot and cold water and electric light were available; also the building was reasonably dust-proof. Life was very full in those days. General surgery was done three times a week and ear, nose and throat work twice a week. I gave all the anæsthetics, except when two operating theatres were working simultaneously. Fortunately the oto-rhino-laryngologist, except in rare cases, used local anæsthesia. During the summer months, which lasted without any rain whatever from April to October, we used to begin operating at 6.30 or 7 a.m., with the idea that the earlier one started, the sooner one finished. The members of the theatre staff complained bitterly at this, saying that they had to get up in the middle of the night, and that if one did finish early, more work was found. I am unable to quote any figures whatever, except from memory, owing to my lack of records. I can say, however, that a total of over 6,000 operations was performed between April, 1940, and January, 1942, and that I personally gave over 3,000 anæsthetics. Until the end of 1940 or early in 1941 the work gradually increased in amount, but continued to be of the same rather uninteresting nature. This also applied to the anæsthetics. There was hardly any "Pentothal" and very small supplies of nitrous oxide, both of which were kept for use in dire emergencies. Moreover, the army pattern gas machine, whilst attractive to look at and undoubtedly capable of withstanding the most amazing physical insults, was very unsatisfactory to use.

After the first Libyan campaign we received some battle casualties, but mostly ones who had had a good deal of treatment further forward; they were mostly men with fractures and wounds in plaster. We were too far from the scene of action for the more acute casualties; another Australian general hospital on the Canal got more of those. We also received a few patients by devious routes from the Greek campaign; but these, too, went mostly to Alexandria or Cairo. About this time yet another Australian general hospital arrived back from Greece, and some of its members came to us. I shall always remember with gratitude the assistance of Major Marshall, its anæsthetist. I had, after many attempts, given up the struggle to get supplies of "Pentothal"; but he frightened our dispenser so much that we soon had reasonable supplies. Also at this time we got a machine for the endotracheal or endopharyngeal administration of ether. It was devised for use with a foot blower; but the attachment of an oxygen cylinder made things much easier and more satisfactory. The work rose to a peak during and after the Syrian campaign, as we were much nearer the scene of action. Every alternate night rail convoys brought patients to Gaza from Haifa, which they reached by motor transport from the forward units. We stopped carrying out the routine "civilian" surgery at this time and concentrated on battle casualties. These were mainly men with wounds or fractures in plaster, and sometimes burns, not to mention foreign bodies. For dressings and the changing of plaster casts (often done in the wards) "Pentothal" was ideal, and was used widely in the 5% solution. For its continuous administration up to two hours, I used to sit and hold the syringe—a method which involves a certain amount of agility in changing or refilling, but which is in many ways convenient. I did attempt to fit up a piece of apparatus for continuous administration, consisting of a Laurie's dripper and some tubing. The devastating frankness of the theatre staff withered any spark of inspiration I might have had, and I went back to the old-fashioned way.

For the removal of foreign bodies from the lower extremity or abdomen, spinal anæsthesia was in most cases ideal, as it allowed one to keep out of the way and often do some other work. Moreover, the administration of "Pentothal" in the dark, while the radiologist and surgeon peer through a screen and move the patient about, is apt to be fraught with difficulties. Patients were anæsthetized either on the X-ray table or on a stretcher in the anæsthetic room. For operations round the face and neck the choice lay as a rule between "Pentothal" and ether given by the endotracheal route, according to whether or not there was likely to be laryngeal stimulation, either direct or remote. I was not then familiar with the technique of intubation with "Pentothal", which would have made this drug suitable for a number of cases in which ether was given.

Towards the end of 1941 the Thoracic Unit was transferred to us. This gave me an opportunity for seeing a great deal of interesting surgery, as well as providing some problems in anæsthesia. The surgeon in charge of this unit, however, was strongly in favour of local anæsthesia and basal narcosis with large doses of morphine and hyoscine, so that it was only in a few cases that I gave anæsthetics. One thing in this regard was strongly impressed on me, and that was that when a patient under such conditions did require some form of general anæsthesia, he was so non-cooperative as a result of the action of morphine and hyoscine that it was much more difficult to anæsthetize him than it would have been in the beginning.

As a result of my experience in Palestine, several things seem worth mentioning.

1. The difficulty in controlling post-anæsthetic chest complications. I can quote no figures, but am quite convinced that they were more common under conditions existing there than in civilian hospitals. There were several cases of massive collapse, and cases of what was presumably lobular collapse followed by consolidation commonly occurred. It was not uncommon also to have patients who developed signs of basal bronchitis during the early post-operative period. These cases were worrying, but exceedingly difficult to prevent. Most of the patients were heavy smokers, and many of them had recently been in dusty localities and often had what they called a "cigarette cough" at the time of operation. I feel that tobacco smoking is an important ætiological factor in these cases, leading as it does to difficulties in the early stage of the induction in the way of coughing and increased secretion. Early post-operative movement, with deep breathing and voluntary coughing, is an important safeguard. The question of the administration of pure carbon dioxide by the nursing staff is one which requires a good deal of consideration. I feel that the use of carbon dioxide in mixtures with oxygen is quite futile. This is not the place to begin a long discussion on the matter; but Souders[2] in an excellent paper sums up the situation admirably. He is convinced of the efficacy of early removal of plugs of mucus blocking the larger airways. He advocates the sucking out of the trachea by a small nasal tube or of the more distal bronchi by bronchoscopy, pointing out that probably an important factor in this matter is the reflex cough provoked by the stimulation. I have felt for some time that the underlying factor in most of these chest conditions is some degree of

atelectasis, on which is superimposed the added factor of infection. This is probably autogenous in most cases, but may I think in some be due to droplet infection, which is a distinct possibility when the beds are close together, as they often are.

2. The cause and prevention of "post-spinal" headaches. These probably more than any other single factor militate against the popularity of spinal anæsthesia with the lay public. Major Graham Macpherson,[3] whom I met in the early days in Palestine when at a British general hospital, and who was interested in the 1:1,500 preparation of "Percaine", admitted to a certain percentage incidence (I think up to 5%, speaking from memory), as do most other writers on the subject. From my experience the occurrence of headache has little to do with the nature of the spinal puncture or the operation, and others have reached the same conclusion.[4] I feel that the assumption of the "head down" position for at least eight hours and preferably longer is important, though I have no idea why. There is no need for the patients to lie on their back like logs in every case. They used to be encouraged when possible to turn from side to side or on their face, though that is admittedly a somewhat difficult procedure in many instances.

3. The cause of reactions to "Percaine" which occur occasionally. Until just before I left the Middle East, I had had no experience of this irritating complication, and stoutly maintained that anything untoward in this way was due not to the drug, but to the people using it. On the last operating day at our Australian general hospital there was a list of eight patients, all of whom had spinal anæsthesia. The operations consisted of two hernial repairs, three appendicectomies, two hæmorrhoidectomies and one excision of an anal fistula. Each patient was seen beforehand, and none displayed any abnormality or any contraindication to the use of spinal anæsthesia. In each case the anæsthesia was completely satisfactory.

One patient began to complain of severe occipital headache before leaving the operating theatre and subsequently became profoundly ill with repeated vomiting, continued headache, abdominal pain, pyrexia and neck stiffness. His condition gave rise to a good deal of anxiety for twenty-four hours and his headache lasted for forty-eight hours.

Each of the other seven patients had similar symptoms, but not so severe.

The most striking occurrence was in the case of a man who had had low block anæsthesia for hæmorrhoidectomy and had been given six cubic centimetres only of the solution. He was quite maniacal for two hours after his return to the ward, but perfectly well next day.

The procedure in this case had followed the normal routine. The ampoules of "Percaine", needles and syringes had all been boiled for five minutes in distilled water, which had come from the usual unimpeachable source, the laboratory. Nothing different had occurred at that end. The batch number of the "Percaine" was noted, and circulars were sent to all units in the Middle East. Major Marshall tells me that he found an exactly comparable train of events when he used by accident some of the same batch. A precisely similar series of three cases occurred when a 1:1,500 solution of "Percaine" with an entirely different batch number was used at another Australian general hospital some months ago. On that occasion two ampoules of the preparation were sent to the Walter and Eliza Hall Institute of Research in Pathology and Medicine at Melbourne; one of these had given trouble and the other had not. It was reported that there was not sufficient material to carry out animal toxicity experiments, but that there was a significant difference in the pH of the two solutions. In order to confuse me still further, I have seen an exactly similar train of symptoms follow an uncomplicated lumbar puncture, performed during the last two weeks on a young adult suffering from pseudo-hypertrophic muscular dystrophy, but with normal cerebro-spinal fluid findings.

4. The importance of keeping adequate records. This is apt to be very boring, but to my mind is of the greatest importance. The ideal arrangement for army records would seem to me a simple form, which ensures the noting of any pre-anæsthetic abnormalities and post-anæsthetic sequelæ, as well as the course of the anæsthesia itself and any incidents related thereto. I evolved for myself in Palestine a card of standard size, six inches by four, based upon the ones I used in private practice before the war. The army kindly printed 3,000 of these for me. This enabled me to note all the relevant findings briefly without going to a lot of unnecessary detail. I think that the recording of the blood pressure every quarter of an hour during a simple appendicectomy or the repair of a hernia, which I have seen done, is quite misguided enthusiasm; but it is interesting and instructive to do the same thing during a partial gastrectomy, for example. Many people who give anæsthetics have assured me that they never see any of the complications to which I have referred. That is not surprising, when they often do not see the patient after he has left the operating theatre. No surgeon of repute fails to visit his patients who have had their appendices removed, on the assumption that such patients have in most instances an uneventful convalescence.

Conclusion.

I have, in this paper, endeavoured to confine myself to an account of personal experiences which may be of some interest. I hope that they will provoke discussion and help to shed a light on problems which I, at least, find most baffling.

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FURTHER ASPECTS OF ANÆSTHESIA UNDER WARTIME CONDITIONS.[1]

By S. V. MARSHALL, M.B., Ch.M., D.A., M.R.A.C.P.,
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Australia.

WITH the permission of Major McCulloch and acting on the suggestion of the Secretary, I should like to add some remarks based on my own experiences abroad that will be supplementary to Major McCulloch's paper.

"Pentothal."

"Pentothal" was a godsend, and the men deserved it whenever possible. Apart from a few administrations in Greece and Crete,[1] I had little experience of its use in forward areas; but I know, from reports[2] and from conversations with officers who had such experience, that it was invaluable. Indeed, because of short supplies, it was for a long time reserved exclusively for use in forward areas. Its portability, stability, ready availability, non-inflammability, speed of action, low toxicity and freedom from after-effects, represent a remarkable combination of advantages. Fortunately, even during the worst periods of short supply, I was able to maintain a small reserve at our hospital, which was drawn upon only when indications were absolute, or nearly so. Later on supplies improved somewhat, so that more latitude in the use of the drug was possible. As a rule, however, I was obliged to ration myself to 0·5 gramme (10 cubic centimetres of the 5% solution) for each patient, carrying on with nitrous oxide and oxygen or ether, if prolongation of anæsthesia became necessary. This may sound meagre and hardly worth the trouble, in view of the transient effect which ordinarily

[1] Read at a meeting of the New South Wales Branch of the British Medical Association on April 29, 1943.

would be produced by such a dose. But the men for whom we used it were very ill, suffering from burns, shock, sepsis, toxæmia, anæmia *et cetera*, and a small dose went a long way.

Much care is required with "Pentothal" in this regard to avoid over-dosage and unduly prolonged narcosis. In such cases three or four cubic centimetres of the 5% solution may suffice for the induction, while the remaining six or seven cubic centimetres may last for as long as an hour or more. Used thus, "Pentothal" provides an excellent basis for supplementary nitrous oxide and oxygen anæsthesia, with percentages of oxygen ranging from 25 to 30, or even higher. This combination was found to be extraordinarily effective in "poor risk" cases, and it is preferable to the use of either "Pentothal" or nitrous oxide and oxygen alone, since the one must involve prolonged narcosis and the other inevitable suboxygenation.

In all circumstances the concurrent administration of oxygen or "Carbogen" greatly enhances the safety and scope of "Pentothal" anæsthesia. As it is rapidly destroyed in the body, the irrevocability of "Pentothal" after injection is of little significance. Since respiratory depression is a feature of its action, the maintenance of a perfectly clear airway is obligatory during and after its administration; this requirement applies to all types of anæsthesia—it is remarkable how often it is disregarded. As has already been indicated, much care is necessary with "Pentothal" in "poor risk" cases, because the patient's powers of elimination may be greatly impaired, especially in severe and prolonged toxæmia. Otherwise persistent narcosis results; this, however, is more alarming than dangerous.

Even if it is used only for induction purposes, "Pentothal" is excellent for those who must undergo repeated anæsthesia and operations. Such patients accept it with equanimity, whereas ether means dread and misery for them. "Pentothal" had quite a field in the Middle East for neurosurgical operations, either as a total anæsthetic or as a supplement to local analgesia. Care was necessary in states of high intracranial pressure, in view of the danger of medullary ischæmia. A 0·5% to 1·0% solution, given by the "continuous drip" method, produced satisfactory results; alternatively, a 2% or 2·5% solution was given either by the ordinary method or by injection into the saline solution delivery tubing. When veins became scarce, it was found useful to remember the external jugular vein as a site for injection. This was often used when extensive burns, plaster casts *et cetera* made the limbs inaccessible. A further advantage was the readiness with which one could control the jaw and airway and watch the patient's condition generally.

Spinal Analgesia.

Notwithstanding the unfortunate occurrences mentioned by Major McCulloch,[3] spinal analgesia had a useful place in the Middle East. We were greatly hampered by having no preparation other than the 1:1,500 solution of "Percaine" in 0·5% saline solution. Despite many efforts, no alternative could be obtained, and not until I received a small supply of "Metycaine" (10%) from Australia was the situation alleviated to an appreciable degree. At a later stage we found that the 5% "Stovaine" and glucose solution was provided for in the British drug scale. This eased the situation somewhat; but the shortness of the anæsthesia it produced was a handicap. Even then, the method was restricted to patients exhibiting definite indications for it, such was the prejudice against it. Nevertheless, we used it fairly widely, and with good results as a rule. This course of action was justified by the scarcity of "Pentothal" and the frequently poor quality of the ether on issue. One always feared further cases of meningism, which, while associated with no permanent ill effects, were extremely distressing to all concerned.

Although it was not on army issue in the Middle East, I was fortunate in getting a supply of "Neo-Synephrin Hydrochloride" (1%) for use as a vasopressor during spinal analgesia; this was kindly sent to me by the Sydney agents. Despite a few minor disadvantages, it is far superior to ephedrine, since with it the danger of circulatory collapse may be almost entirely obviated.[4] One great advantage of spinal analgesia was noted when one had to give anæsthetics in two operating theatres simultaneously. With satisfactory analgesia and the safeguard of "Neo-Synephrin Hydrochloride", patients could be left, and another general or spinal anæsthetic could be given in the next room. Another important point was to give the "Percaine" at least half an hour before the operation was timed to begin, so as to ensure the full development of analgesia. Occasionally I have had two or even three spinal anæsthetic patients thus "cooking" out in the anæsthetic room, awaiting their turn for operation.

It is reassuring to know that ample supplies of the "heavy" "Percaine" and glucose solution (0·5% and 6·0% respectively) for spinal analgesia are available in Australia. In my opinion this is far superior to the "light" 1:1,500 "Percaine" solution in most cases.[5] With it, distressing or serious after-effects are rare, and this bears out the experience gained in pre-war private practice. Just as with the "light" solution, adequate time (at least fifteen minutes) must be given for the heavy solution to act. If the operation is begun too soon, the analgesia will be imperfect, and the equanimity of patient, surgeon and anæsthetist will thus be disturbed.

The intravenous use of morphine is a great help when analgesia, either spinal or local, is imperfect.[6] Despite premedication with morphine and hyoscine, a further quarter of a grain of morphine may be safely given in such circumstances. However bold in the field, soldiers are often easily upset in the operating theatre—a situation readily overcome by the timely intravenous administration of morphine. Otherwise general anæsthesia must be induced, and if "Pentothal" cannot be spared for this purpose, much struggling and obscenity will accompany the exhibition of ethyl chloride or ether. The same applies to nitrous oxide and oxygen.

The great advantage of "Percaine" is its prolonged action; but this is sometimes undesirable. Operations on the upper part of the abdomen requiring high spinal analgesia are best performed under a shorter-acting drug like "Metycaine". The reason is that prolonged intercostal paralysis, especially in cases of bronchitis associated with copious sputum, favours the development of pulmonary collapse. "Novocain" is another suitable drug in such circumstances, and may be given by the so-called continuous technique,[7] which I saw used on several occasions at the Rothschild Hadassah Hospital at Jerusalem.

Gas Anæsthesia.

Nitrous oxide and oxygen anæsthesia *per se* has a limited applicability under army conditions. The bulky nature of the apparatus and supplies limits its use to base hospitals and other fixed locations. As has already been indicated, however, we found it invaluable in certain cases for supplementing "Pentothal" narcosis. The necessity for economy made the use of the carbon dioxide absorption principle obligatory. We found cyclopropane gas useful on several occasions, but imperfections in available apparatus limited its applicability. Supplies, too, were extremely difficult to obtain.

Shock.

Used in its wider and now commonly accepted sense, the term "resuscitation" covers the treatment of shock generally, as well as the restoration of animation after anæsthetic or asphyxial collapse. I will make a bold statement, and it is this: it is no exaggeration to say that resuscitation has become so efficient as to permit the administration of almost any anæsthetic agent with reasonable safety.[8] The old "pint of blood" idea, originating rather in the quantity a donor might safely give than in the needs of the recipient, is obsolete. Efficiency often means the giving of two or three or more litres of blood, with perhaps one or two litres of serum as well. For exsanguinated patients massive and rapid transfusions are indicated before any anæsthetic or operation is permissible, while the administration should be continued by a drip method during the conduct of these procedures, and afterwards, too, if necessary.

While blood pressure readings are of great practical importance and utility in determining the condition and progress of patients suffering from shock, the value of hæmatocrit readings and hæmoglobin estimations should not be overlooked.[2] The information they give is of profound importance in aiding the decision to use serum or blood. In this way states of hæmodilution (characteristic of hæmorrhage) or hæmoconcentration (characteristic of traumatic or toxic shock) will be disclosed. In the first instance the administration of blood is indicated, and in the second, that of serum. The giving of blood when hæmoconcentration exists will only aggravate the circulatory embarrassment. Of course, the necessity for blood may be quite obvious; but in practice serum transfusion may be begun at once in all cases pending blood typing, the performance of hæmatological tests, the collection and cross-matching of blood *et cetera*. The great advantages of serum are its universal compatibility and immediate availability, since no storage on ice (with consequent necessity for warming before use) is required. In addition, serum has valuable nutritional qualities; it supplies specialized proteins and the various electrolytes in their proper proportions. Too much stress cannot be placed on the necessity for adequate nutritional and hæmatological preparation of patients before both urgent operations and operations of election. Saline and saline-glucose solutions, so important formerly in the treatment of shock, are now largely discarded. They still have their place in states of dehydration and will afford temporary benefit in shock associated with hæmoconcentration. In such circumstances a simple glucose solution is often preferable to one containing chlorides or combinations of various salts. We learned by bitter experience the importance of these considerations in relation to anæsthesia and operation on gravely ill patients. It is all very troublesome, requiring organization and sometimes involving a good deal of nocturnal disturbance for various people; but the results are most gratifying, especially for the patients concerned.

As for asphyxia, anæsthetic collapse, primary cardiac failure *et cetera*, nothing is more efficacious than the prompt intermittent inflation of the lungs with oxygen. Every operating theatre should be equipped with an oxygen "bag and mask" outfit, kept ready filled for instant use. One of the chief merits of the "Austox" field service gas machine is its ready adaptability to this purpose. Any other modern gas machine may be used in the same way. We used such measures on the slightest provocation at Gaza, the Voluntary Aids and the orderlies vying with one another to produce the bag, ready for use, with the utmost celerity. The record, twelve seconds, was held against all comers by one of the Voluntary Aids.

Special Devices.

As Major McCulloch has emphasized, the Flagg "can" is an excellent device.[1] It is a true example of the poor (or rather, resourceful) man's endotracheal anæsthesia apparatus. Major McCulloch has stressed the fact that a wide bore Magill tube and a suitable metal angle are essential accessories. A further necessity is that the delivery tubing shall be comparatively short (a maximum length of 12 inches) and of wide bore (half an inch if possible). It is a common error to use tubing that is too long and too narrow, involving a large "dead" space and resistance to the respiratory excursions. This "dead" space is an important consideration in all forms of apparatus; it is easy to see how tidal exchanges may be impaired if it is not reduced to a minimum.

Finally, I would mention a piece of apparatus which came to us in our latter days in Palestine—the Nuffield ether vaporizer.[6] Employing a simple principle—the inhalation of air over a surface of ether, but with the addition of an ingenious device for maintaining constant the temperature of the ether and so its rate of vaporization—it provides remarkably steady and controllable anæsthesia. The latent heat of crystallization of calcium chloride is used to transfer heat at a steady rate from the hot-water tank to the ether container. Thus, one fill of water lasts much longer than is the case with ordinary water jackets. We found the machine very useful for the maintenance of ether anæsthesia, especially when the inhalational endotracheal technique was used. Once in action, the machine is automatic, the only attention required being the progressive reduction of the ether concentration as time passes. This is effected by the moving of a lever, a matter easily attended to by orderlies or Voluntary Aids after an explanation of the simple principles involved.

[1] At this stage Major Marshall demonstrated a Flagg "can" manufactured from an ordinary tin.

Acknowledgements.

I should like to thank the Commanding Officer of the 113th Australian General Hospital for allowing me to bring here tonight several pieces of apparatus, and for providing facilities generally for the production of the two papers, Major McCulloch's and my own.

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SULPHONAMIDES AND PURULENT PERITONITIS.

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DURING the past four years, cases of purulent peritonitis have been encountered, and in many of these treatment has been by the local application of sulphanilamide. In some cases both local and internal administration of sulphanilamide were the methods used, and in a few cases the purulent peritonitis was treated by intravenous and oral administration of sulphanilamide; in two cases sulphapyridine was used.

The bacteriostasis of sulphonamide need not be discussed here, but a paper which was recently published by Wilson[1] gives excellent information about sulphanilamide and its local application in the peritoneum. Wilson refers to the effect of local implantation of sulphapyridine, sulphathiazole and sulphanilamide in the tissues and body cavities of 100 rats. Wilson points out that only extremely large amounts of these drugs produce deleterious effects on the tissues, and that lesser amounts do not inhibit reparative processes. Sulphanilamide is found to be the best of these drugs for local application because of its rapid absorption, while sulphapyridine tends to become enclosed by granulation tissue. Jackson[2] shows that the local application of sulphanilamide to the peritoneum is of rather transitory importance, because the whole of the drug is absorbed within twenty-four hours, according to him; although Key and Burford state that sulphanilamide remains in a wound for forty-eight hours.[3]

There appears to be some controversy concerning the application of sulphanilamide in the unautoclaved form, because, as has been rightly pointed out, unless sulphanil-

amide is a germicide, which is considered to be incorrect,[1] then it should be sterilized because of possible spore contamination, and the best means of sterilization is to autoclave the powder. This, however, is said to produce changes in the drug, which limit its activity, but there is no proof of this.

Reports of Cases.

The following were all cases of intraperitoneal infection. The first patient was treated with "Soluseptasine", a solution which contains sulphanilamide, because it was not thought safe to use the powdered sulphanilamide at that time. "Soluseptasine" is a proprietary drug in solution.

CASE I.—Mrs. B. was admitted to hospital on October 18, 1938, with what was thought to be a pelvic catastrophe. Her pulse rate was rapid (140 beats per minute) and the pulse was thin. The abdomen was rigid, and, on vaginal examination, a vague and non-pulsatile mass appeared to be present in the right fornix. The temperature was subnormal. It was decided to open the abdomen as the best means of treatment. When this was done, a mass consisting of a ruptured appendix and right adnexa bound together was found. The appendix was not walled off, and free pus was found in the pelvic peritoneum. The pus was mopped out and 20 cubic centimetres of "Soluseptasine" were left in the pelvis. A further 10 cubic centimetres of "Soluseptasine" were used to irrigate the wound between the parietal peritoneum and the skin. The fluid was actually left bathing the recti muscles, fascia and subcutaneous fat. A wick of rubber dam was left between the rectus sheath and the lower end of the wound. Later in the day a further 10 cubic centimetres of "Soluseptasine" were given into the gluteal muscles, and this injection was repeated twice a day for four days. There was no vomiting nor appreciable cyanosis and the recovery was uninterrupted, the skin wound healing by first intention.

CASE II.—Miss M. McL., aged twenty-six years, was suffering from several large fibroid tumours. These were removed by myomectomy. The appendix was examined and found to be congested, but it was thought unwise to remove it because of the presence in the field of large areas of tissue of lowered vitality, due to the amount of trauma caused by the excavation of the fibroids. Convalescence was satisfactory until the tenth day, when abdominal distension took place; this subsided with the passing of a rectal tube. The distension recurred several times and was relieved by the same treatment.

The patient's general condition, however, began to deteriorate, and her pulse rate became rapid, although her temperature was only slightly raised. It was thought that blood had oozed into the pouch of Douglas from the myomectomy suture lines of the uterine peritoneum. On rectal examination, however, no abnormality could be discovered. Her condition became worse, and the cul de sac was opened under ethyl chloride anæsthesia, but no pus was obtained.

On the twelfth day the patient's general condition was even worse than before. Several opinions were obtained, and in all five medical men saw her. All concluded that a band was causing irregular constriction of the large bowel and that indications of obstruction were present. It was finally decided that the patient's abdomen should be reopened. The entire peritoneal cavity was found to be filled with pus from a ruptured appendix. Loops of intestine were gummed together, and large epithelial plaques were lifting off the serous walls of the gut.

No attempt was made to remove the appendix, but the pus was mopped out as far as possible and "Soluseptasine" was left in the cavity, which was also drained. The continuous intravenous drip administration of glucose and saline solution was instituted, and 20 cubic centimetres of "Soluseptasine" per litre of solution. For a week the patient's condition was desperate; faecal fistulæ developed in the abdomen and vagina, although the tubes were left in only for twenty-four hours. After another week her condition improved appreciably and eventually she made a complete recovery. She now leads an active life in war work.

CASE III.—Mrs. H. had an ovarian cyst, which slowly underwent torsion and became impacted in the posterior cul-de-sac. It became necrotic in parts and was infected by colon bacilli. The mass was removed, and the familiar putrid colon bacillus smell was present in association with a small amount of pus which was found. The cavity was cleaned out and approximately four grammes of crushed sulphanilamide were dusted and packed into the space. Some was also placed in the abdominal wall. The recovery was uneventful, and there was no sign even of the abdominal wound breaking down outside the parietal peritoneum.

CASE IV.—P.C., a girl, aged eleven years, had an abdominal swelling associated with severe pain in the pelvis towards the pubic area. The pain was severe and her condition was unsatisfactory. When the abdomen was opened, white, purulent fluid was found in the peritoneal cavity. As much as possible of the fluid was aspirated, and as sulphanilamide was not at hand, the abdomen was closed after some soluble sulphapyridine had been instilled. A small aperture was left so that soluble sulphapyridine could be injected into the suture lines by means of a syringe. The infection was thought to be pneumococcal; but as the operation was performed on a Sunday, no satisfactory laboratory diagnosis was obtained. However, it was considered that the condition was pneumococcal peritonitis. Soluble sulphapyridine was given intramuscularly, the amount being equal to three grammes *per diem*. Tablets given by mouth were vomited, but the injections had no such effect. The condition of the patient rapidly became normal, and she has remained well for over two years.

CASE V.—Mrs. A. had had a pelvic infection, and drainage had been carried out through a posterior colpotomy opening. Some months later she still had a swinging temperature, and a large mass was present high up on the right side. Abdominal section was performed and the mass was found to be an old pus tube, which was adherent to the area of the obturator fossa. The mass was removed and the cavity packed with four grammes of sulphanilamide powder. Recovery was slow, but the temperature became normal and the patient has been well for over a year.

CASE VI.—Miss P. was sent to my clinic with the diagnosis of purulent salpingitis. At operation the lesion was found to be an appendix walled in by adhesions behind the right ovary. When some adhesions were separated pus welled up, although no fluctuant body had been discovered on vaginal examination. The sac was aspirated, and both this and the wound in the abdominal wall were packed with sulphanilamide powder. The patient made a complete recovery.

CASE VII.—Mrs. S., aged fifty-two years, had a retroverted uterus with a mass behind it and high up. At operation the mass was found to be an abscess. This abscess was aspirated and the cavity was filled with three grammes of sulphanilamide powder. Recovery was entirely satisfactory.

CASE VIII.—Mrs. W. was admitted to hospital suffering from menorrhagia and some dyschezia; she had a large tumour in the pelvis. It was thought that necrobiotic fibroid growths were present, especially as she had an elevated temperature. At operation it was found that the fibroids were also associated with old, thick-walled pus tubes. Pus welled up on separation of the gut from the uterus. This pus may have been sterile; but as the temperature excursions were from 99° to 101° F., and as they had been thought to be due to the necrobiosis, it was decided to apply sulphanilamide. This was done, and the patient made a satisfactory recovery.

CASE IX.—Mrs. J. had a large, dirty, fungating sarcomatous mass arising from the right labium and extending into the abdomen. This was removed; but the large area left was rather denuded and became purulent. The cavity was each day filled with sulphanilamide, and the infection soon cleared and granulation of the large crater took place.

CASE X.—Mrs. A.S. had both Fallopian tubes dragged behind the uterus; they were bathed in a pocket of pus containing colon bacilli. The pus was aspirated and the cavity filled with five grammes of sulphanilamide. The abdominal wall was also treated with the drug. The patient became cyanosed, presumably owing to methæmoglobinæmia; but the cyanosis responded to treatment by methylene blue tablets, and eventually the patient was discharged from hospital in a satisfactory condition.

About seven weeks later the patient had acute abdominal pain, especially in the right iliac region. This pain was associated with a temperature of 102° F. and a pulse rate of 140 per minute. I could not associate this with her previous operation, and I asked a physician for his advice. The diagnosis was peritonitis, probably pneumococcal. Sulphanilamide was given by mouth, and the patient's condition appeared to improve. No abnormality could be felt in the pouch of Douglas. Subsequently her condition, though improved, was still unsatisfactory. At this time a fluctuant mass was felt in the posterior cul de sac. This was opened, and about 500 cubic centimetres of turbid fluid escaped. Some was collected and sent to a laboratory, but no organism was isolated. It was considered, however, that

the evidence pointed to pneumococcal peritonitis. With continued treatment by sulphapyridine the patient quickly recovered after drainage of the pelvis.

CASE XI.—Miss A., aged eighteen years, was examined on account of abdominal pain, present intermittently for many months. Her doctor had recently sent her to hospital, where she was found to have an elevated temperature swinging from 99° F. in the morning to 102° F. in the evening. A hard mass, which was not fluctuant, was found between the rectum and the abdominal wall. It was as large as a coconut. Laparotomy was decided upon, and when the mass, with hard thick walls, was separated from the parietal peritoneum, pus welled up into the wound. The part was packed off and the incision into the wall of the mass was made after this. The pus was aspirated by a sucker.

The cavity was packed with two grammes of sulphanilamide, and a large bore tube was placed in the cavity to drain the suprapubic region. The packing was removed and 0·5 gramme of sulphanilamide was placed in the peritoneum. Finally, a further 0·5 gramme of sulphanilamide was placed in the abdominal wall and the abdomen was closed, the large bore tube being left for drainage. In twenty-four hours the patient's temperature was normal. Some sanious fluid was draining into a sterile bottle. A catheter was put into the tube and eased down until the end was in the abscess cavity. After aspiration of the contained fluid, 20 cubic centimetres of "Soluseptasine" were run into the cavity. This procedure was repeated twenty-four hours later. The tube was withdrawn in a further twenty-four hours, when sulphanilamide powder was packed into the drainage area.

The patient's temperature began to rise after this, and it was decided to give two grammes of sulphanilamide every four hours. In twenty-four hours the temperature was again normal, and a further 0·5 gramme of sulphanilamide was given every four hours for another twenty-four hours; after this there was no further change, and recovery proceeded slowly. Two weeks later some granulation tissue appeared, obstructing the drainage. This was reduced with silver nitrate; but the temperature rose again and pus appeared to have collected. As readers of this journal know, the presence of pus prevents satisfactory bacteriostasis by sulphanilamide. It was therefore decided to wash out the cavity by means of a catheter and Carrel-Dakin irrigation. The patient's condition then improved.

CASE XII.—Mrs. T. was nine months pregnant, and had developed albuminuria and œdema; and her blood pressure was 210 millimetres of mercury (systolic) and 120 (diastolic). Her medical adviser decided to rupture the membranes to induce labour, but in doing so he discovered a *placenta prævia*, which bled profusely, and it was necessary to pack the vagina. Some hours later the patient's general condition became serious, and the temperature and pulse rate were both elevated. The fœtal head was still above the pelvic brim, so it was decided to perform a Cæsarean section. This was begun when the maternal pulse rate was 160 per minute and the fœtus was already dead. The packing was removed from the vagina and some gentian violet was poured in through a speculum. After the fœtus and placenta had been removed, three grammes of sulphanilamide were placed in the uterine cavity, which was then sutured. A further 1·5 grammes were placed in the peritoneal cavity and 0·5 gramme was packed into the wound, which was closed. A blood transfusion was given, and the glucose and saline solution were given by the drip method; 20 cubic centimetres of "Soluseptasine" were given in this solution. The condition of the patient caused considerable anxiety for a few days, but with good nursing and the administration of iron *et cetera*, which succeeded the sulphanilamide, her condition improved. The wound broke down in the lower part, and the uterine sutures were expelled with a good deal of endometrium through the vagina. However, the ultimate result appears to have been satisfactory. In five weeks the patient asked how long it would be before she might again attempt motherhood.

It should be noted that not one of these patients was nauseated, whereas others given sulphanilamide orally have vomited and have also felt very ill. It is considered by some authorities that nausea and cyanosis are avoided by the giving of nicotinic acid.[4]

Discussion.

From the investigations of Lockwood and others, it would appear that the effect of sulphanilamide in the peritoneum is derived from a high concentration in the blood stream due to rapid absorption. On the other hand, Key and Burford state that sulphanilamide remains in a wound for forty-eight hours. It is thought that there is some immediate local effect, provided that frank pus is removed; in Case X it was nearly thirty hours after the intraperitoneal application of the sulphanilamide before toxic signs were found. There appears to be little interference with the intestines *et cetera* when the sulphanilamide powder is placed in the peritoneum, and in the first ten cases mentioned it would have been expected that clinical manifestations would have been noticed if sulphanilamide had had an effect on the peritoneum.

Summary.

1. Intraperitoneal application of powdered sulphanilamide has proved most effective in cases in which the peritoneum has been infected.
2. The danger from toxic manifestations appears to be relatively slight.
3. Gross pus must be removed before the powdered sulphanilamide is applied.
4. Healing of abdominal wounds and the normal state of the intestines do not appear to be adversely affected by the application of sulphanilamide.

Acknowledgement.

My thanks are due to Surgeon-Captain Carr, C.M.G., Director of Naval Medical Services, for permission to publish this article.

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Reports of Cases.

NOTES ON A CASE OF LEIOMYOMA OF THE STOMACH.

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THE following case of an innocent tumour of the stomach affecting an elderly woman is sufficiently uncommon to merit description.

Clinical Record.

MRS. N.N., an office cleaner, aged seventy years, was referred to me by Dr. Melville Kelly with a history of attacks of acute upper abdominal pain, which had occurred frequently for a period of twelve months. During the last few months she had noticed a lump in the upper part of her abdomen when lying flat in bed. For the forty-eight hours immediately preceding her admission to hospital she had had severe pain in the epigastric region associated with continuous vomiting, the vomited material containing blood.

On examination, she was seen to be a rather spare, elderly woman, of good colour and in good condition. She was more apprehensive of an attack of vomiting than in any actual distress. A firm, rounded mass the size of a tennis ball was palpable in the mid-line below the xiphisternum; it moved slightly on respiration, and palpation revealed limited mobility, with slight tenderness. The liver was not palpable or enlarged on percussion. No other tumour could be felt in the abdomen, and there was no evidence of any free fluid in the abdominal cavity. A blood count gave the following information: the red cells numbered 5,100,000 and the white cells 10,000 per cubic millimetre, the hæmoglobin value was 14·0 grammes *per centum* and the colour index was 1·0. A fractional test meal examination disclosed complete achlorhydria, with the presence of blood in some of the samples withdrawn.

In view of her symptoms and the presence of the tumour, it was considered that a carcinoma of the stomach was probably present. For reasons of economy no barium meal X-ray examination was carried out, and it was decided to give the patient the benefit of an exploratory laparotomy.

On August 11, 1942, under ether anæsthesia induced by the "open" method, the abdomen was opened by a mid-line incision extending from the xiphisternum to the umbilicus. The liver was normal and not enlarged. The stomach wall was normal in appearance, but was caused to bulge forward by a lump internally. On palpation, this was found to be a pear-shaped mass inside the stomach, which could be felt arising from the lesser curvature fairly high up and projecting into the stomach lumen. The pyloric sphincter was greatly dilated, admitting two fingers by invagination, and appeared to have occasionally gripped the tumour, causing the patient's symptoms of pyloric obstruction.

As the lump presented the characteristics of a leiomyoma growing from the stomach wall, it was decided to remove it by gastrotomy. The wound was carefully packed off and the stomach was delivered and opened by a vertical incision over the tumour, which at once presented. It was pear-shaped, and covered by the gastric mucous membrane, in which there was an area of ulceration at one point, near the fundus of the tumour. The tumour was now found to be more sessile than pedunculated. An elliptical incision was made through the covering mucosa at the base of the tumour and deepened to the muscle layer. Free hæmorrhage occurred from a rich blood supply arising from the arterial loop on the lesser curvature. The tumour originated from the smooth muscle wall of the stomach, and during its excision the stomach wall was "button-holed" anteriorly just below the lesser curvature.

The wound was repaired carefully in layers, "000" catgut on an atraumatic needle being used, and the gastrotomy incision was closed in a similar manner. The abdominal incision was then closed, a duodenal suction drainage tube was passed, and the stomach was kept "decompressed" for forty-eight hours. The patient made a smooth and uneventful convalescence, receiving the routine treatment usually given after a gastro-enterostomy operation, and she was discharged from the hospital on the twenty-second day after operation.

FIGURE I.
Tumour, natural size, showing area of ulceration in covering mucosa.

The pathologist reported that the tumour was encapsulated and covered by mucous membrane, having a small ulcer near the lower pole; its measurements were 2·5 inches by 1·75 inches by 1·75 inches. Microscopic examination showed it to consist of spindle-shaped cells supported by much fibrous tissue; some hæmorrhage and a few giant cells were present. Inflammatory changes only were found in the region of the ulcer. The diagnosis was leiomyoma.

Commentary.

Tumours of smooth muscle occur through the gastro-intestinal tract, and although they are rare, their incidence in general is much higher than suspected. Golden and Stout, in an extensive survey of cases recently published, found that 60% of tumours occurred in the forty to sixty years of age group; they were present most commonly in the stomach, where projection into the lumen is usual, as increase in size occurs. Such tumours tend to become polypoid, and may attain such a size as to cause pyloric obstruction by a "ball valve" effect, or to become actually gripped by the pyloric sphincter, as occurred in the case here described.

Degeneration and ulceration occur in over 80% of cases, causing hæmatemesis. Clinical symptoms resemble those of gastric ulcer, but in most cases sooner or later an epigastric tumour becomes palpable, and leads to a suspicion that gastric carcinoma is present. The fact that such a tumour is freely movable and relatively free from pain, together with the fact that such patients are often in fairly good health, should suggest the possibility of the presence of a leiomyoma.

The X-ray appearance is characteristic, and had a radiological examination been carried out in this case, it would doubtless have made the nature of the tumour clear.

In general, leiomyomata of the stomach are innocent and do not metastasize, although such tumours occurring more distally in the intestinal tract or projecting retroperitoneally do tend to metastasize, and merit the title leiomyosarcomata.

FIGURE II.
Photomicrograph of a portion of the tumour. (× 150.)

Acknowledgement.

I am greatly indebted to Dr. Campbell Duncan, of the Commonwealth Laboratory, for the pathological report and for the excellent photographs.

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Reviews.

THE MEDICAL HISTORY OF THE GREAT WAR.

THE third volume of "The Australian Army Medical Services in the War of 1914-1918" has now been published.[1] This volume completes what is known as "The Official History of the Australian Army Medical Services". The first volume was devoted to Gallipoli, Palestine and New Guinea, and the second dealt with the Western Front. The present volume bears the sub-title "Special Problems and Services". The author, Colonel A. Graham Butler, D.S.O., is to be warmly congratulated on the completion of a laborious task. He was faced with peculiar difficulties, first of all in the collection and then in the collation of the records from which his work was being compiled. Of the result he has every reason to be proud. He has created a lasting memorial to the Australian medical services in the war of

[1] "The Australian Army Medical Services in the War of 1914-1918", by Colonel A. G. Butler, D.S.O., V.D., B.A., M.B., Ch.B.; Volume III; 1943. Canberra: Australian War Memorial. 8¼" × 5¼", pp. 1123, with 85 illustrations, graphs and diagrams. Price: 21s.

twenty-five years ago, and has given to Australian medicine something by which he himself will be remembered. The two first volumes showed us what we might expect to find in the third. Here we have a carefully planned and well-balanced discussion on certain technical problems and their implications, and also an account of associated services. Colonel Butler writes with candour and discernment. In his appraisement he can give full credit where he thinks it is due, and is not afraid to expose weakness where he sees it. Even the late Neville Howse, who was the undoubted hero of the second volume, is shown as being so imbued with army tradition that he was at first not at all enthusiastic about research in the service under his command. In addition to these qualities of his writing Colonel Butler has a philosophical background which lifts the book onto a high plane. It should be pointed out, as Colonel Butler states in the preface, that the medical history of the Australian forces in the first World War has been part of the general product of the Australian Official History. It thus came within the responsibility of the general editor, Dr. C. E. W. Bean. Colonel Butler records his indebtedness to Dr. Bean. He states that he has had the "inestimable advantage of his guidance, inspiration and scholarly oversight". He adds that while every single chapter owes much to Dr. Bean, "this has involved no sense of restraint or censorship, but rather a stimulus to self-expression".

The book is divided into five sections and an epilogue. The first section deals with technical problems, the second with the Naval and Air Services, the third with the technical specialties, the fourth with the aftermath of war, and the fifth with statistics. In the epilogue Colonel Butler asks: *Quo vadimus?*

The first of the technical problems discussed is chemical warfare. On the very first page we read that timely, detailed and exact warning was received by the British, French and Belgian commands from spies and prisoners before the first gas attack by the Germans. These warnings were almost unheeded, and for the unfortunate troops the surprise was absolute. Within a few hours of the first gas attack, Canadian medical officers diagnosed the nature of the gas, chlorine, and suggested improvised means of defence. "By discipline and intelligence they saved the Channel ports, perhaps the war for the Allies." Colonel Butler traces the development of gas warfare and the evolution of the defence measures undertaken by the British. Unfortunately the army undervalued scientific men and methods, but notable success was eventually achieved. These successes were "wrenched from inefficient and unsuitable methods and from many failures, some partial, others complete". The development of the allied gas defensive has, we are told, been extolled as one of the major military triumphs of the war, and Colonel Butler thinks that this praise is fully justified from the fact that both Britain and France devised and supplied to their armies respirators which, in their final form, afforded complete protection against any poison gas devised by the enemy. It is stimulating to read that one of the first and most significant effects of the initiation of chemical warfare was to compel the mobilization for military purposes of the resources, material and personnel of civilian science and scientific industries.

In the section on moral and mental disorders Colonel Butler states that in 1914 the study of mind was philosophical and introspective rather than scientific. The medicine of the minor forms of mentally disordered conduct was not regarded as a matter worthy of the serious attention of scientific physicians, neurologists or psychiatrists; in practice, functional disorders were relegated to the general physician. As a result of its early history Australia had acquired a demand for a more definitely moral perspective in the adjustment of punishment to crime. With this there was a leaning towards prevention as against penalties, for constructive as against negative handling of human problems. The outlook was reflected in the system of Commonwealth military law. The moral and mental as well as the physical standard of normality of the Australian Imperial Force was unquestionably high. In a great measure the Australian Imperial Force selected itself, and both internal and external factors in the brief history of the Australian nation favoured the creation of a race of men attuned to a high standard of physical health. There was no systematic and deliberate elimination of recruits who were morally and mentally unfit. Probably the most effective weeding out of mental unfits took place in camps of training. Family and personal history were of the utmost importance in determining moral and mental breakdowns, and in this regard the chief cause of difficulty was a misstatement by the recruit or suppression by him of important facts. As might be expected, Colonel Butler has a good deal to say about psychoneuroses and shell-shock. Most obvious in his opinion was the lack of cooperation, amounting to actual antagonism, between military policy and medical progress, and in the latter the clash between the different schools of scientific thought. As a result the medical service and the profession were unable to check the spread of a concept of war neurosis, the idea and the name of shell-shock, which, though propounded in good faith as a helpful medical hypothesis, became through military and social exploitation and mass suggestion a devastating menace. Colonel Butler also deals with the diagnosis "N.Y.D.N." and refers to the major psychoses. The problem of repatriation of the psychotic soldier was peculiarly complicated, and its solution is described as one of the most admirable episodes in the medical history of the Australian Imperial Force. In the course of his concluding remarks on this chapter Colonel Butler states that the outstanding and amazing feature of modern warfare is the illustration that it affords of the resilience, the power and the majesty of the human mind.

In regard to venereal disease, Colonel Butler points out that at the outset of the war of 1914-1918 taboos surrounding venereal disease imposed on the troops of the British Empire and in particular on those of the Dominions unnecessary impediments in the meeting of the menace and on the medical services a needless aggravation of a difficult task. He traces the efforts that were made to check the incidence. A campaign of lectures proved worse than useless. Surgeon-General Howse was not impressed by the results following moral efforts and social activities. He determined that more active measures should be taken to protect men who had exposed themselves to infection. Colonel Butler traces the development of the prophylactic campaign and gives details of the working of the scheme. He also gives a short account of an abortive conference on venereal disease that was held at the Colonial Office on July 19, 1918. The extent of the campaign against venereal diseases among the Australian Imperial Force in England is shown by the following figures for 19 months ending December, 1918: 235,277 soldiers went on leave from Australian Imperial Force depots; 171,277 cards of instruction were accepted; 142,609 prophylactic outfits were accepted; 168,563 soldiers attended for prophylactic treatment; 12,128 attended for abortive treatment; and 8,173 were reported as cured after showing signs of disease. Colonel Butler remarks that the war brought a changed outlook on sex among the British peoples. In the sphere of preventive medicine the result was wholly beneficial, and in Australia, at least, a rational outlook and scientific public health legislation resulted largely from the realism of war.

After a chapter on the influenza epidemic comes one of the most important in the whole book, that dealing with the scientific background of army medicine in the war. As the medical services of the army in Great Britain evolved, administration assumed overwhelming importance. The heart of many a keen professional worker, we read, was broken, and Colonel Butler publishes a note from Major S. F. McDonald who served with the Royal Army Medical Corps. Major McDonald stated that there were certain leading members of the corps to whom all "science" was anathema. In the words of one of them there was to be "no b——y research". This phrase became famous later on by the letters "N.B.R.". But it was not only Royal Army Medical Corps regulars who adopted this attitude. The army itself was both short-sighted and obstinate. In support of this statement the investigation of trench fever makes a sad and sorry story. Three observers, McNee, Renshaw and Brunt, tried to discover the cause of trench fever. They reached a certain stage in their investigations which pointed strongly in the direction of an insect-borne disease of the typhus type, and to the louse as the vector. The military authorities, no less than scientific medicine, required positive proof. By the end of 1915 it had become apparent to McNee and his co-workers that the problem could be solved only by a complete energetic campaign of human experiments. The army authorities in France, however, refused the facilities for an organized campaign. The investigators were compelled to work under great difficulties, and finally succeeded in producing the disease in a human volunteer. But this is as far as the investigations got. The experiments carried out in 1915 remained quite uncontrolled and unconfirmed until the American Commission took up the same problems in January, 1918. When the Americans came on the scene the British army authorities woke up and then, at long last, two campaigns were carried out "in a spirit of mutual cooperation, combined with a wholesome tang of competition—the ideal atmosphere for scientific creation". The dénouement was a dead heat in the final discovery by American and British workers.

The history of the development of research in the Australian Army Medical Corps is a somewhat similar, but

not quite so pathetic, story. It is one that redounds to the great credit of Lieutenant-Colonel A. H. Tebbutt. At the outbreak of war, Tebbutt, then a major, urged on Colonel T. Fiaschi the importance of bacteriology in army medical service. Fiaschi saw no value in the suggestion, nor did General Williams, to whom Major Tebbutt was referred. Neither later on did Surgeon-General Howse fully appreciate the significance of scientific research. "Fully alive through his Gallipoli experience to the practical importance of 'preventive medicine' in the field, he was yet incapable of appreciating from his own experience the value of research as applied to the medical problems of this war." When he was specifically called on to do so, he found both men and facilities for research, but with him it was always a side issue. At the same time, his attitude was very far from that of the "N.B.R." already mentioned. He did initiate at Anzac the Anzac Medical Society which was a genuine effort to advance and disseminate knowledge. Later on, Major Tebbutt had his opportunity and was appointed adviser in pathology in 1916. He submitted a comprehensive proposal for the setting up of a central laboratory in Egypt and indicated the work that such a laboratory might do. Howse decided to adopt the recommendations. At this time Lieutenant-Colonel Charles Martin, F.R.S., returned to Egypt from Lemnos where he had been serving with an Australian hospital. The episode between Tebbutt and Martin reflects great credit on both of them and shows them to have been imbued with the true scientific spirit. Martin agreed to serve under Tebbutt and actually began to do so. But Tebbutt saw that Martin was the man to be in charge of the new work and asked to be relieved of it. This was described by Martin as a fine and magnanimous action. Once pathological work had been started in this way, great progress was made and laboratories were set up in many centres and in connexion with many Australian units. Colonel Butler has something to say about the dissemination of scientific knowledge and of the medical journals in Great Britain which undertook this work for the army during the last war. In regard to dissemination of knowledge today all connected with THE MEDICAL JOURNAL OF AUSTRALIA can feel content that its pages are being extensively used during the present war to publish the original observations of medical officers serving with Australia's fighting forces.

The last chapter in the section of the work devoted to technical problems consists of five articles dealing with some surgical problems of repair and reenablement. These deal with gunshot wounds of the brain; wounds of the peripheral nerves; facio-maxillary work at the Queen Mary Hospital, Sidcup; amputations and artificial replacements; and the final problems in wound surgery, such as chronic osteomyelitis and latent sepsis. These articles have been contributed by Group-Captain H. R. G. Poate, Colonel Sir Alan Newton, Lieutenant-Colonel Sir Henry Newland, Colonel Wilfred Vickers and Lieutenant-Colonel George Bell.

The second section of the work is devoted to the naval and air services. The chapter dealing with medical service with the Royal Australian Navy is based on a comprehensive narrative by Surgeon-Captain E. T. P. Eames. These chapters take a subsidiary place in this volume, and are presumably included for the sake of completeness.

The third section deals with the technical specialties of the army: the dental service, the pharmaceutical service, the nursing service and the massage service. The inauguration of the dental service is something that stands to the credit of Surgeon-General Howse. In March, 1916, he managed to have dental units sent to France with the divisions for the Western Front. To accomplish this, he had "a tussle" with the British officers controlling transport to France. It was the first time on record that any dental unit was allowed by the British authorities to go to France as a recognized part of field ambulance personnel. As a matter of fact, the provision of dental service for British troops on the Western Front was accelerated by the fact that Sir Douglas Haig, in command of the First Army in September, 1914, suffered severely from toothache when all his energies were required for the battle. His immediate treatment was carried out by a civilian dentist, but urgent telegrams were sent to the War Office, asking for the provision of dental officers, and dentists soon began to arrive in France to be attached to casualty clearing stations. Colonel Butler traces the development of the Australian Army Dental Service and shows how useful and indispensable its work was.

In the chapter on pharmaceutical service, Colonel Butler quotes the late Wilfred Trotter, who said in an address that the only branch of medicine which had always and with increasing intentness and success pursued the ideal of exact measurement, was pharmacy. He did not think that there could be any reasonable doubt that the future of the parent to a large extent depended on how far she was able to adopt the characteristic methods of her daughter.

In regard to the nursing service, Colonel Butler points out that the Australian trained nurse who in civil life had compelled recognition of nursing as a profession, won her battle also in wartime. Her authority in hospital wards was recognized and laid down in military regulations. The Australian nursing service not only helped to raise the social standard of the civil profession, but gave to the thousands of Australian soldiers a comfort and sustainment wholly unobtainable through any other human agency.

The struggle of the army massage service for proper recognition is a long one and cannot be told in this place. Colonel Butler states that there is ample evidence that the services rendered by the personnel of this service were fully up to the highest standard at that time achieved or aimed at.

The fourth section of the book is entitled "The Aftermath of War". In the first chapter on the Australian invalids in England the medical work carried out is analysed and discussed, and particular attention is paid to the Australian auxiliary hospitals, which are shown to have been instruments of national policy rather than of professional responsibility. The succeeding chapter deals with the sea transport of Australian soldiers. This service of invalid transport is described as undoubtedly a highlight of the medical war effort, and one in which imperial cooperation was most effectively achieved. Several of the Australian hospital ships are described, an account of some of the work carried out on them being included.

In the chapter on medical problems in Australia an insight is given into the administrative department of the Director-General of Medical Services. This office was held with distinction by Major-General Richard Herbert Joseph Fetherston. When Australia assumed indefinite responsibilities for an overseas force, the department was reduced in size rather than increased, and Fetherston, then a colonel, was at first a part-time officer. Though his work soon engrossed his full time, he served throughout the war as a militia officer on a small "composite" salary. His status was never certain and his staff was at first grossly inadequate; even at the end of the war it was never large enough to permit him to exercise close oversight of the affairs of the military districts. Officially the Director-General of Medical Services was the chief officer of a department of the Adjutant-General's Branch. In practice he had to deal with the heads of the other branches of the army, of the Australian Imperial Force, of the British Medical Service. Towards the end of the war he formed, for practical purposes, with the Adjutant-General and the Finance Minister of the Military Board, an administrative triumvirate. In spite of this, he did not have direct access to the Minister, and unless the Minister asked for him personally, his point of view was expounded by the Adjutant-General. As far as we know this anomaly still exists. In a valedictory address to the medical service of the Australian Imperial Force, Fetherston appealed for loyal aid and support of Howse, and we are told that he himself loyally fulfilled his own exhortation. When General Fetherston retired, it was at his own request. He had resolutely declined the honours and rewards which were his by full right and which were offered to him. Colonel Butler concludes with the remark that the future student of Australian history should know that Fetherston stands "within the very sanctuary of the traditions of the Australian Army Medical Service".

In this chapter mention is made of orthopædic treatment and of reparative surgery. This is a long story and with the discussion of the war-damaged soldier in the next chapter might easily be the subject of a separate article. The same may be said of repatriation and of the pensions system. To review these in this place is impossible. In the chapter on the statistics of the war much interesting information will be found if the figures are dissected.

Colonel Butler's final chapter *"Quo Vadimus?"* is dealt with in the leading article in this issue. The whole work is completed by a series of eight appendices and these contain, *inter alia*, a list of the officers, non-commissioned officers and men of the Australian Army Medical Services, who lost their lives in the first World War.

There are two indices. The first is a personal index in which the names of those mentioned in the text are to be found. The second is a general index which is entirely adequate. The book contains a series of interesting illustrations. Its general make-up and appearance are of the same high order that marked the first two volumes. For this the Halstead Press, of Sydney, is to be complimented.

The Medical Journal of Australia

SATURDAY, JULY 31, 1943.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

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"QUO VADIMUS?"

THE appearance of the third volume of Colonel A. Graham Butler's "official history" of the part taken by the Australian Army Medical Corps in the war of 1914-1918, reviewed on another page in this issue, is something more than the publication of just another book dealing with that conflict. To many persons the books of the "official history" series are just interesting reading matter and possibly reminiscences; others see in them the unfolding of a process by which Australia has been said to blossom into nationhood; Colonel Butler's volumes, and especially the third, trace the development, along certain avenues, of progress in medicine that was of the utmost value during the conflict and has left its mark on medicine of today. In our review of the work we have endeavoured to define its scope and to show it as a logical and ordered whole. The development of army medical services as we know them today has been a slow process, not only because growth in medical knowledge has been slow, but also because army tradition, if not inflexible, is almost unbending, and the British peoples, generally speaking, are not temperamentally suited to rapid change. But progress was inevitable, resistance and apathy were broken down and a high degree of efficiency was attained. All this is clear to the reader as he follows Colonel Butler from chapter to chapter, but that is not all; there is something almost indefinable running through the work, a hint of a high purpose that is allowed to show itself for a moment in the epilogue: "*Quo vadimus?*" This inevitable question and the need for all intelligent men to find an answer are the reasons why we cannot be content with a formal review of the work.

When a medical practitioner becomes an officer in an army medical unit he has to revise his mental attitude towards patients. No longer must he regard them merely as men, sick or injured, who are to be cured of their sickness or cared for till healing of wounds occurs. They are to be seen as units of a fighting machine which must be kept in action. It thus happens that the most severely wounded man or the most gravely ill does not necessarily receive priority in treatment. This changed outlook is not always easily attained, but it has been pointed out that such attainment is possible without sacrifice of the qualities that go to make a faithful surgeon or medical officer.[1] But the role of the army medical officer is not really so simple as this. Colonel Butler has described what he calls the "triple mandate" of the Army Medical Service. This triple mandate is received from the military command, from the nation and from humanity. The military command commissions the Army Medical Service to promote and conserve manpower for the purpose of war. The service is responsible to the nation at large for promoting by intelligent anticipation the efforts of the civil institutions whose duty it should be to prepare for useful return to civil life the soldiers unfitted for further military service. By humanity, "as represented by the nations who subscribed to the International Conventions of Geneva and The Hague", the service is charged "with minimizing so far as possible the individual sufferings of the combatants of both sides". Though these three strands of purpose are inextricably woven in a self-contained and consistent scheme of medical service, each furnishes, so Colonel Butler avers, an end in itself. All three enter at every stage into the medical problem, now one and now another providing the dominating motive. The triple mandate was accepted in the war of 1914-1918—the Army Medical Service became at once a highly technical military service, a scientifically equipped social service cooperating in the repair and reenablement of the war-damaged soldier and a fully accredited human agency for promoting and cooperating in the alleviation of suffering. Colonel Butler shows in regard to the third mandate that according to Australian experience the Geneva Convention was observed to an extent far greater than the propaganda of either side admitted. He has also come to the conclusion, by a study of Australian experience and by current literature on the subject, that in the matter of the treatment of enemy wounded "as between ourselves and the enemy from the point of view of humanity there was 'nothing in it' one way or the other". Much the same statement can apparently be made in regard to the collection of wounded in the field. The Australian outlook and practice in the protection of medical units on the sea is shown by correspondence from Surgeon-General Howse in connexion with the carrying of armed guards on the Australian hospital ships to maintain internal discipline and the use of hospital ships for transportation of non-combatant personnel and hospital stores. "In each instance the vigour of General Howse's action in maintenance of the letter and spirit of the Convention produced a profound impression on the officers concerned."

Thus we move on from the end of the first world war to the present. Colonel Butler insists that to picture the story of humane alleviation during and after the last war as one of the complete breakdown of the Geneva and Hague Conventions is to travesty the truth. He admits that their provisions have been contested and largely ignored by certain elements motivated sometimes by fear and sometimes by the principle that might is right; but he declares that their history has been rather that of a struggle between these elements and the mass of opinion

[1] *The Australian and New Zealand Journal of Surgery*, Volume XI, 1941-1942, page 209.

in most countries, even the most totalitarian, which insists on the avoidance of what it deems unnecessary in war. We may not all agree *in toto* with these views, but we shall all consent in the statement that the chief and most terrible menace to humanity today lies in the Nazi group, its bedevilment of the German people and its end which is one "from which man has painfully climbed through 4,000 years of groping, striving and suffering." We believe, nay we know, that this menace will be destroyed, that humanity will not descend once more into the abyss of 4,000 years ago. We know also that in the struggle the Australian Army Medical Corps of today will strive to aquit itself honourably of its three mandates, as did the service whose history Colonel Butler has so nobly recorded. This will be splendid, and in a few years, maybe, another historian will continue the history from the point at which Colonel Butler has left it. Yes! it will be splendid, but still insufficient. We are on the edge of an abyss. Not to slip into it is not enough. We must leave our precarious station and climb higher to a surer foothold and a wider vista. The question *"Quo vadimus?"* therefore becomes one for every citizen. Colonel Butler refers to an editorial which appeared in *The Lancet* bearing the title "The Red Cross: An End or a Beginning", in which it was held that the principle of mutual aid must be applied to mankind rather than to sections. The writer foresaw a new banner, a new red cross, under which those who fought would be able to give to the world the positive ideals for which it was looking. This campaign, it was pointed out, would call for more than heroism—it would need a change of heart. " . . . in the circumstances of today it is all too evident that nearly all of us are English or German or Japanese or communists or property-owners before we are doctors and scientists." Of course, doctors and scientists will never be able to inculcate new ideals into the people unless they are humanists, and they will need the help of all other humanists, whether these others have had a scientific training or not. This is no doubt the full import of the article, portion of which has been quoted. Again the reader may say that this is idealism and quite impracticable. It may not appear quite so impracticable if the suggestion is made that in all human affairs in which control is necessary, more thought be given to the man, his character and his real worth, than to the agencies that wish to give him control or to the shibboleths that he or they may utter. Amiel wrote that each *régime* had its inner menace and its own danger. The latent malady, the congenital vice of democracy, was, he held, the abandonment of duty and the substitution for it of envy, pride and independence, in a word the disappearance of obedience. In our democracy we can choose our leaders, those whom we must obey. We can, if we will, choose men of character and of real worth. Let us quote Amiel once more:

> Institutions are worth no more than the men who apply them. The name, the party, the costume, the opinion, the system are almost insignificant and frivolous things beside the intrinsic worth of individuals. Orthodox or liberal, conservative or radical, white or black, rich or poor, royalist or republican, I will even say Catholic or Protestant, Christian or Jew, even these are superficial distinctions beside the one I mean. Tell me what you love and I will tell you what you are, and you are worth only what you are.

If men and women can be made to think about these things, they may awaken to the fact that they can to a large extent be masters of their own destinies and the destiny of the race. If all the people who read Colonel Butler's book ask themselves seriously where they and the nation are heading, his arduous labour will not have been in vain and Australia will have yet another reason for gratitude to him.

Current Comment.

MEDICAL INSPECTION OF SCHOOLS IN VICTORIA.

THE report on education of the Victorian Minister of Public Instruction for the year 1941-1942 has been published. The Minister's opening statement bears the date December 1, 1942, and the whole document deals with the year ended June 30, 1942. The last section of the document is the report on medical inspection presented by Dr. Eileen Fitzgerald, chief medical inspector of the department. Dr. Fitzgerald's reports have been discussed in these columns from time to time, the value of her work has been commented on and its expansion has been urged. In the present report Dr. Fitzgerald opens by remarking that there has been no expansion of the work since her last report. In these days perhaps we should be content with this state of affairs, though it is noted with regret that the dental work is less because one officer is on active service. It is to be hoped that once medical officers are set free from the Services after the cessation of hostilities, the school medical services will be among the first to receive reinforcements. The present staff of the Victorian department consists of full-time officers—seven medical officers, nine dentists, ten dental attendants (three of them temporary), twelve school nurses (eleven temporary) and two disinfectors (one temporary). During the year 1,927 teachers and 50,524 children were examined; 28,834 children were treated by dentists; and the school nurses visited 3,559 homes, paying 4,975 separate visits. The usual routine was interrupted to a certain extent because some of the staff had to take sick leave and because school medical officers had to give first-aid lectures to teachers in certain selected areas. Further, special examinations had to be made of the children liable to be evacuated to country districts as an emergency measure. Another factor interfering with usual routine was that help had to be given to other departments which were short staffed because of war conditions.

From the information in the tables of the report it is a little difficult to judge the exact position. The number of children examined is, as already mentioned, stated to have been 50,524. The number examined in regard to billeting was 58,443. In another table we note that 6,384 boys and 6,484 girls attending State schools were examined. Confining our attention for the moment to the two last-mentioned groups, comprising 12,868 children, we note that 66·4% of the boys and 40·2% of the girls were free from defects. The difference between the boys and girls is remarkable. Unfortunately Dr. Fitzgerald has not dissected the figures; on a future occasion a detailed discussion on this matter would be welcome. The table shows that in every group of defects the percentage of girls involved exceeded the percentage of boys with the exception of hearing. Here 3·3% of boys were affected and 1·8% of girls. In regard to vision, 6·1% of girls had defects and 4·4% of boys; 2·2% of girls wore glasses and 1·0% of boys. Defects of the nose and throat were found in 14·0% of girls and in 10·0% of boys. In dental defects the difference was considerable; 39·6% of girls had defects and 25·4% of boys. Of the girls 12·4% had defects of hair and 1·1% of boys; presumably this was a question of pediculosis and is easily understood. The heart was affected in 4·3% of girls and in 0·3% of boys; anæmia was found in 0·2% of girls and in 0·02% of boys; the skin was the site of defects in 0·8% of girls and in 0·4% of boys. Under "other defects" are grouped 10·3% of girls and 3·4% of boys.

The dental treatment carried out is set out in a table which contains interesting details. Of the children examined (28,834) no less than 12,030 were examined by dental officers of travelling vans. The number of extractions of teeth in the first dentition was 51,468 and 3,621 fillings were made; 9,881 teeth of the second dentition were extracted and 33,453 fillings were made. General anæsthetics given numbered 1,700; regulating plates made numbered 511, dressings numbered 1,725 and "other operations" 5,435. The work of the travelling vans is given under the several headings as follows: first dentition, 16,207 extractions and 1,681 fillings; second dentition, 2,803 extractions and 10,495 fillings; general anæsthetics, 2; regulating plates, 2; dressings, 372; other operations, 2,502. Of the importance of dental inspection and treatment of school children there can be no doubt. During the period under review there have been difficulties. As already mentioned, one member of the dental staff is absent on military duty; other members have had to take sick leave. In addition difficulty has been experienced in obtaining accommodation in some country towns; rail services have been curtailed and petrol shortage has not made the work any easier.

Though Dr. Fitzgerald states that the work has not been extended, it is noted with satisfaction that on June 30, 1942, the last day of the period with which the report deals, a child psychiatry clinic was established, with the consent of the State Evacuation Committee, for the investigation and treatment of children likely to be evacuated to country districts. The work of this clinic will be followed with interest by all concerned in child hygiene and welfare; its extension will surely be inevitable. One feature of the work which will not be welcomed is that work for partially sighted children is not being carried on. In 1941 a special class for these children was established, "but it is not at present possible for the school medical officers to give the time necessary for the supervision of this class". This is a deplorable state of affairs and does not do credit to the Minister and his department. Dr. Fitzgerald, we hope, will not remain silent on this regrettable failure.

TRENDS IN GENERAL SURGERY.

M. THORSTAD, H. SALTZSTEIN AND A. MCALPINE have recently published an interesting analysis of operations performed at the Harper Hospital over a five-year period.[1] In each year of this period the number of major operations performed was in the vicinity of 4,000; and there was no significant alteration in the percentage operative mortality rate during this time. The average mortality rate was slightly less than 3%. As might have been expected, appendicectomy was the most common major operation, comprising approximately one-third of the total number. During this five-year period the number of operations such as major amputations, especially in diabetic subjects, and cholecystectomy gradually decreased; whereas, on the contrary, other types of operations, such as gastrectomy, radical resections of the colon and rectum, and hysterectomy, steadily increased in number. These changes may be regarded as indicative of the increasing use of improved diagnostic methods which allow more careful selection of patients for operation or which allow an earlier diagnosis of malignant disease to be made. Operations on lesions which are readily diagnosable without ancillary aids, such as radical mastectomy and herniorrhaphy, have not shown an alteration in incidence—a fact which bears out the above statement. The reduction of the number of major amputations performed, especially in diabetics, is confirmatory evidence of the improved treatment that the cases of incipient gangrene must have received from the physicians at the hospital concerned.

As already mentioned, the total mortality rate has practically remained stationary during this five-year period; a detailed analysis revealed that this also applied to most of the individual operations. It is indeed surprising to read that the mortality rate for perforated peptic ulcer treated surgically was still approximately 22% and had not improved during the five-year period. While we were under the impression that a better figure was usually obtainable for these patients, it is opportune to make a plea for the still further improvement in treatment of this condition.

An analysis such as that of Thorstad and co-workers is to be applauded, for it permits of self-criticism, perhaps with the discovery of some unpleasant truths. It is all too easy for a surgeon to be deluded into the belief that with experience and the passage of time his method of treatment must yield increasingly better results. Analysis and criticism are, of course, of value only if the bad results are not glossed over and are not lightly regarded.

During the five-year period discussed by these authors intravenous "Pentothal Sodium" anæsthesia, plasma and serum transfusions, and the popular use of blood banks were introduced, and they constitute some of the greatest advances in clinical medicine during that time. These, together with the sulphonamides, should ensure that a similar analysis of results over the next five years will demonstrate a significant improvement in the results of general surgery.

[1] *Annals of Surgery*, February, 1943.

DR. C. H. KELLAWAY.

THE announcement that Dr. Charles Kellaway, Director of the Walter and Eliza Hall Institute of Research in Pathology and Medicine, had accepted the position of Director-General of the Wellcome Research Laboratories in England and America, was received throughout Australia with mixed feelings. While Australian practitioners in medicine rejoice to know that an Australian has been chosen for so important a post and congratulate Dr. Kellaway most heartily on his appointment, they regret that he will leave the Commonwealth. Dr. Kellaway was appointed Director of the Walter and Eliza Hall Institute in 1923, and the scientific work which has come from the Institute ever since has always been of a high order. A hard worker himself, he has stimulated others, and the high position which Melbourne occupies in the scientific world is in no small measure due to him; it is, in point of fact, no exaggeration to say that he has had an influence on every centre of scientific learning in the Commonwealth. THE MEDICAL JOURNAL OF AUSTRALIA is indebted to him for advice and assistance willingly given on many occasions. We can imagine no person more fitted for the position to which he is going. We understand that it has but recently been created. When Sir Henry Wellcome died in 1936, all the shares of The Wellcome Foundation Limited were vested in trustees for "the advancement of research work bearing upon medicine, surgery, chemistry, physiology, bacteriology, therapeutics, *materia medica*, pharmacy and allied subjects, and any subject or subjects which have or at any time may develop an importance from the invention and improvements of medical agents and methods for the prevention and cure of diseases and control or extermination of insect or other pests". The trustees are also charged with the maintenance of a fund for the establishment or endowment of research museums or libraries in any part of the world, and for the collection of information of every kind connected with the history of medicine and allied sciences which in their opinion may be desirable. Wellcome laboratories exist in England and America, and Dr. Kellaway is to have general oversight of the work carried out at the laboratories in both countries. At the present time Dr. Kellaway occupies an important post on the staff of the Director-General of Medical Services of the Australian Military Forces, and it is understood that he will not take up his new work while his services are required by the military authorities. On behalf of the medical profession of Australia we wish for Dr. Kellaway success in his new appointment and the same measure of confidence and goodwill among his fellow practitioners on the other side of the world that he enjoys on this.

Abstracts from Medical Literature.

SURGERY.

Aseptic Gastro-Intestinal Resection.

W. WAYNE BABCOCK (*Surgery, Gynecology and Obstetrics*, October, 1942) describes and illustrates in detail the use of a method of aseptic gastro-intestinal resection in which the two lines of proposed section are approximated and divided between two crushing clamps. The two limbs to be anastomosed are thereby held in the one remaining clamp, and the anastomosis is completed aseptically by suturing beneath and over the clamp.

Torsion of the Testicle.

MUNROE WOLF (*The American Journal of Surgery*, September, 1942) presents sixteen cases of torsion of the testicle. Orchidectomy was carried out in seven, orchidopexy in four, and in the remainder for various reasons expectant treatment had been employed. In only three of the series was the affected testicle undescended. The predominant clinical features were sudden severe pain in the testicle and cord, retraction and elevation of the testicle, a slight rise in temperature, increase in pain on elevation of the scrotum, and an abnormal position of the epididymis. Immediate surgical intervention is imperative if atrophy is to be prevented.

Cancer of the Right Half of the Colon.

C. W. MAYO AND C. P. SCHLICKE (*Surgery*, November, 1942) present an historical survey of the problem of resection of the right half of the colon, and state their own conclusions based on a study of ninety-six patients on whom one-stage resection with end-to-end anastomosis of ileum and colon was performed at the Mayo Clinic by a group of surgeons. When the operation was first being attempted in 1879 and subsequently, a one-stage procedure was used. The mortality figures were high, and attempts were made to reduce them by variations in the method of anastomosis. This led to the production of many types of gadget for facilitating this stage and for making it, as far as possible, an aseptic procedure. Then a further attempt to improve results took the form of performing the operation in multiple stages, for instance, a Mikulicz type of operation, or a preliminary ileo-colostomy followed later by the resection. This era appears to be passing, and there is now a tendency to revert to the original method of one-stage operation and primary anastomosis. Unfavourable factors in the Mikulicz operation are the excoriating ileal discharges, infection of the wound, the incidence of post-operative hernia, the long morbidity, the necessity for multiple operations, and the frequent appearance (in 12% of cases) of recurrences in the abdominal wall. The two-stage method in which a preliminary ileo-colostomy is performed was introduced with the idea that the shock of operation might be reduced, and that possibly, there might be some auto-vaccination of the peritoneal cavity following the first operation. Rankin felt that this might be the best procedure for surgeons without special training in this work, but in a previous review one of the present authors found the mortality 6·7% higher and the hospital stay longer with the two-stage procedure than with the one-stage. The authors have come to the conclusion that with proper selection of cases, and adequate pre-operative and post-operative treatment, the one-stage operation is superior. They have used the end-to-end anastomosis widely, but they point out that other methods have their place. Also, although they favour a single operation in suitable cases, they point out that in the presence of obstruction, it should not in any circumstances be performed. Under such conditions, either a lateral anastomosis as a preliminary in the milder forms of obstruction, or an ileostomy or caecostomy in more severe grades, should be done. When a one-stage operation is used, some surgeons have felt that additional security might result from performing an ileostomy at the time of the resection. The authors do not regard this as a sound procedure. They report that in the series under consideration, the mortality when no ileostomy was done was 11·1%, but with ileostomy, it rose to 28·6%, and this in spite of the fact that ileostomy was not reserved for the more ill patients.

Actinomycosis of the Head and Neck.

O. SAMUEL RANDALL (*The American Journal of Surgery*, September, 1942) stresses the need for early diagnosis in actinomycosis of the head and neck. In any infection of two weeks' duration or longer actinomycosis should be considered. The condition is commoner in adults than in children. Most of the growth takes place in connective tissue, while spread by lymphatics is very unusual. Spread is by continuity or by metastasis through the blood stream. Of the three methods of treatment, surgery, irradiation and the administration of potassium iodide, the author favours surgery. Surgical measures such as incision, excision, curettage and drainage should have precedence over all other forms of therapy. Frequent and meticulous examination should be made for pockets requiring curettage and drainage. Sixteen cases are presented. One patient died, and twelve have been cured.

Sulphonamide Compounds and Wound Infection.

PERRIN H. LONG (*The Journal of the American Medical Association*, January 30, 1943) discusses the use of sulphonamide compounds in the prevention and treatment of wound infection. He states that their use for the oral and topical prophylaxis or treatment of contaminated or infected wounds is a valuable adjunct to careful surgical treatment, but cannot replace it. The general principles which govern the chemotherapy of wounds are applicable regardless of the anatomical location of the wound, and it would seem on the basis of present knowledge that a combination of systemic and local therapy offers the best chance for the prevention of wound infection, and for the cure of an established infection. The author advocates as the most suitable drug for systemic therapy sulphadiazine given by mouth with the dose adjusted so that blood concentrations of 0·4 to 7·0 milligrammes per hundred cubic centimetres are obtained. Sulphanilamide is recommended as the best drug for topical application. Care should always be taken to prevent the caking of sulphanilamide in the wound, and this can be achieved by the application of moist gauze dressings following the application of the drug to the wound. In the absence of clinical infection, there is little reason to continue oral therapy with sulphadiazine for more than five to seven days, but in order to prevent secondary infections from occurring after primary prophylaxis has been successful, it is necessary to apply sulphanilamide powder locally until wound healing is complete.

Sulphathiazole Anuria Treated by Renal Decapsulation.

M. L. WEINSTEIN AND E. L. ADAMS (*The American Journal of Surgery*, April, 1943) report a case of sulphathiazole anuria in which treatment by decapsulation of the kidneys was successful. At operation a biopsy was taken, and the authors present a description, with photographs, of the microscopic appearance of the renal cortex. The patient was a man of thirty-nine, of alcoholic habits, who had been given nine grammes of sulphathiazole over a period of three days for a cold with cervical lymphadenitis. Apparently he recovered from this illness, but three or four weeks later he began to suffer from nausea, hiccup and generalized aching pains. Four days later he was admitted to hospital, and was found to be jaundiced and to have clay-coloured stools. Oliguria had been present since the recurrence of illness, and in hospital his urinary output was only one and a half to four and a half ounces per day. On the third day in hospital his blood non-protein nitrogen content was 115 milligrammes per 100 cubic centimetres. At this stage a diagnosis was made of acute toxic hepatitis complicated by an acute diffuse glomerulonephritis initiated by the previous month's upper respiratory tract infection. Sulphathiazole was considered as a factor in the oliguria, but was excluded on the basis of the time (over three weeks) which had elapsed since its administration and the absence of gross hæmaturia. Cystoscopy revealed no obstruction below the kidneys, and as the blood non-protein nitrogen level had risen by the sixth day to 165 milligrammes and the blood creatinine content to 21 milligrammes, a diagnosis of intra-renal œdema was made, and it was decided to decapsulate the kidneys. This was done under ethylene and spinal anæsthesia. The kidneys were found to be enlarged by about 20%, and were seen to "puff out" when the capsule was incised from pole to pole. The capsule was then readily stripped off the kidneys. These were greyish red in appearance and a biopsy was taken. The patient's general condition and blood chemical findings then steadily improved, and after a substantially uneventful convalescence he was discharged as recovered. The microscopic study revealed the cortical tubuli as lined by swollen, frayed and vacuolated cells. Within their lumina

were desquamated epithelial cells, occasional red blood cells, basophilic and eosinophilic casts, and circumscribed basophilic concretions. The authors consider that some patients have a tendency to develop sulphonamide calculi, just as others acquire ordinary urinary tract stones. This is suggested by the appearance of calculi after small doses of sulphathiazole.

Sympathectomy for Peripheral Vascular Disease.

H. B. SHUMACKER, JUNIOR (*Surgery*, January, 1943), discusses the place of sympathectomy in the treatment of peripheral vascular disease, and presents the results of sympathetic denervation of eighty-three extremities. The author stresses the necessity, in any instance, of evaluating the relative part played by organic obstruction and by spasm in causing vascular insufficiency. Spasm can be effectively released, while nothing can be done for organic obstruction. From the history and from ordinary examination, from the presence or absence of major pulsations, from the character of the arteries on palpation and on X-ray examination, from the colour changes in the extremity with alteration of position and after release of a tourniquet, from the stability or lability of warmth of the affected part, much can be learned as to the degree to which vascular spasm contributes to the arterial deficiency. Accurate measurement is best achieved by observation of the skin temperature of the affected part before and during inhibition of sympathetic vasoconstrictor impulses. Inhibition is secured by warming the body or other limbs, by diathermy to the lumbosacral area or by spinal, general or local anæsthesia. The direct infiltration of the sympathetic nerves with procaine has the special advantage of permitting the study of the effect on pain of interruption of the sympathetic pathway, and the author advises its use whenever pain is present. The author describes the technique employed in lumbar and dorsal sympathectomy.

Ligation of Patent Ductus Arteriosus.

GEORGE H. HUMPHREYS (*Surgery*, December, 1942) reports a series of seven patients suffering from patent *ductus arteriosus*, on whom he had performed ligation of the duct. Attempts at this procedure had been made as early as 1907 by Munro, but the idea seems to have been abandoned for some thirty years after this. It was not until 1939 that Gross and Hubbard were able to report the first successful case. Since then many reports have appeared. The present communication deals with seven patients between the ages of nine and thirteen years. They were selected patients, chosen because they showed evidence that continued patency of the ductus was resulting in deleterious effects. The findings, some of which were present in each of these cases, were those of a mechanical overloading of the heart, shown by cardiac failure or diminished cardiac reserve, chronic malnutrition, delayed growth and development and repeated respiratory infections. In addition, in two patients the ductus had become associated with an infected intimal thrombosis with subacute blood-stream infection. A transpleural approach, as described by Gross, was used in all cases. There were no operative deaths. In one case operation had to be repeated owing to the recurrence of the patency, due apparently to cutting through of the ligature. All the patients showed improvement, and have maintained good health with the exception of one, who showed little change in the early stages, and died twelve months after operation from complications associated with a post-operative aneurysm of the ductus. The two patients who had subacute blood-stream infection, and who had resisted intensive chemotherapy, both failed to give positive blood cultures on repeated examinations after operation. They have remained well, and are apparently cured. The same experience in similar cases has been reported by several other observers. Some authors have suggested that ligation should be performed in the absence of symptoms in order to prevent the onset of intimal thrombosis and infection. The author of this communication believes that operation should be performed only on patients who show the evidences of trouble on which he selected the present series of cases.

Subdural Hæmatoma following Blast.

W. D. ABBOTT, F. O. DUE AND W. A. NOSIK, of the United States Naval Reserve, draw attention to the occurrence of subdural collections following exposure to blast injuries (*The Journal of the American Medical Association*, February 27, 1943). Subdural hæmatoma is a not uncommon complication of cranial injuries in civilian life. Blood collects in the subdural space where it undergoes chemical disintegration, leading to a collection of fluid of high osmotic pressure which absorbs fluid and so increases in size to give rise to progressive symptoms. The authors have observed a similar condition in patients who have been exposed to blast injuries. A small amount of blood collects in the subdural space, or in some cases, a tear of the arachnoid mater occurs and cerebro-spinal fluid collects in this space. The arachnoid heals, leaving the fluid encysted, and it then undergoes the changes seen in ordinary subdural hæmatomata. The most pronounced symptoms are severe generalized headaches increased on exertion and often nocturnal. Coma, syncope and convulsions may occur, and psychiatric changes in personality are recorded. Ten cases were seen by the authors and of these five were bilateral. Operative treatment follows the usual treatment for subdural hæmatoma. In two of the cases subdural hæmatomata were found. In seven of the cases subdural effusion was present. There were no operative deaths.

Non-Penetrating Abdominal Injuries.

D. O'CALLAGHAN (*The British Journal of Surgery*, October, 1942) reports two cases of non-penetrating visceral abdominal injuries. The first occurred in a patient who sustained a severe laceration of the inferior surface of the liver associated with two tears of the retroperitoneal surface of the duodenum with tearing of the peritoneum on the side of the duodenum. The second patient sustained a deep laceration of the pancreas and also two tears of the serous and muscular coats of the stomach without penetration of the mucous coat. Patients who suffer from these abdominal injuries usually suffer from shock, but this is not invariably present. In addition there may be evidence of internal bleeding. The diagnosis rests mainly on the finding of signs of peritoneal irritation. It may be difficult to ascertain the presence of this irritation, as injuries to the abdominal wall may produce almost indistinguishable signs. It is said that persistent local rigidity which tends to extend is more characteristic of peritoneal irritation than of parietal damage, in which the rigidity does not usually extend. Another valuable sign is the "release sign", the patient complaining of an increase of pain when the firm pressure of the palpating hand is removed. In some cases a rising pulse rate is of great significance. But at times, the pulse rate rises rapidly at the onset, and remains at the high rate throughout the period of observation. When the signs are not sufficiently definite to indicate operation immediately, the patient should be reexamined at hourly intervals until a decision is reached. If, however, an abdominal injury has not been excluded at the end of six or eight hours, then laparotomy should be performed without delay. The prognosis in cases of abdominal injury is not good. The mortality rate rises rapidly when operation is delayed. However, it should be recognized that the treatment of shock should not be neglected in order to achieve the earliest possible exploration.

Excision of Pilonidal Cysts.

THE two objects in view in treating pilonidal cysts are the complete removal of the cyst and the obliteration of dead space in closing the wound. G. S. Van Alstyne (*Surgery*, November, 1942) discusses these two points. He maps out the limits of the cyst on the surface by passing a probe into the sinus in every direction and marking on the skin with a scalpel the distance to which the point of the probe penetrates. He points out that if a dye is to be injected into the sinus, this must be done several days prior to operation, as the dye will not stain tissues immediately. In any case, the injection of dye only tells the surgeon when he has actually trespassed on the cyst. If anything is to be used, it is better to inject bismuth paste to distend the cyst. Ordinary methods of suture, if used in these cases, only stretch the skin across the depression of the natal cleft, and so leave a dead space in which serum collects with consequent danger of infection and failure in primary union. Instead of the two skin edges being sewn together, it is suggested that each edge with its underlying fatty layer should be sutured down independently with heavy silk to the thick fascia covering the posterior aspect of the sacrum and coccyx, the suture passing through this layer just to the opposite side of the mid-line. All sutures are inserted before being tied. The author thinks it wise, as these cysts are always infected, and as the region is close to the anus, to leave a little gap at the lower end of the incision for drainage.

British Medical Association News.

SCIENTIFIC.

A MEETING of the New South Wales Branch of the British Medical Association was held on April 29, 1943, at the Robert H. Todd Assembly Hall, British Medical Association House, 135, Macquarie Street, Sydney, DR. K. S. M. BROWN, the President, in the chair.

Anæsthesia in War.

On behalf of Major J. H. McCulloch, MAJOR S. V. MARSHALL read a paper entitled "Anæsthesia under Wartime Conditions" (see page 81).

Major S. V. Marshall read a paper entitled "Further Aspects of Anæsthesia under Wartime Conditions" (see page 83).

DR. H. J. DALY said that Major Marshall had clearly shown by means of most carefully kept charts the value of resuscitative methods in combating shock before patients were submitted to operative procedures. Transfusion of blood or plasma, as indicated, had undoubtedly saved many lives which would otherwise have been lost. Transfusion of blood was now a commonplace measure which had been speeded up by the war. Before this war intravenous saline transfusion had often been used to resuscitate patients suffering from shock, but it was now recognized that its value for this purpose was short lived if the patient was badly shocked, especially if this shock was accompanied by much blood loss. Referring to "post-spinal" headaches, Dr. Daly said they had caused some surgeons to give up spinal analgesia. Their cause was still undiscovered, although many theories had been advanced to explain their causation. Whatever their cause, they occurred much less frequently in those patients who remained in bed for some days after the spinal anæsthetic. Sometimes headache was particularly distressing and continued for a fortnight or more. It was usually relieved by keeping the head low. Lately the administration of 0·5 cubic centimetre of pituitrin had been suggested and used with some success. Occasionally the use of 50% magnesium sulphate retention enemata afforded relief.

Major McCulloch had said he did not use "Carbogen". Dr. Daly agreed with this and said that oxygen was what shocked or cyanosed patients needed; they had enough carbon dioxide already built up in the blood to stimulate the respiratory centre when this centre had been revived by oxygen. Referring to "Pentothal Sodium", Dr. Daly remarked that Dr. Marshall had been the first to use this anæsthetic in Sydney. He said he agreed that it should not be given unless oxygen was at hand to combat cyanosis and respiratory failure. If oxygen was not at hand, then an endotracheal tube passed down through the larynx into the trachea could be used to ventilate the patient artificially. The anæsthetist inflated the lungs by applying his mouth to the tube and blowing down it after closing the patient's mouth and nose. The lungs were allowed to deflate passively. Half a dozen such inflations were sufficient to revive the patient and restore his colour. Dr. Daly had often demonstrated this method to students. The blood could be fully saturated with oxygen by this procedure.

DR. A. DISTIN MORGAN said that the great value of Major McCulloch's paper and Major Marshall's remarks lay in the fact that they were the recounting of personal experiences. In anæsthesia, resuscitation *et cetera*, nothing took the place of experience. The use of some new technique might be very attractive; but until one had acquired experience in it, one was not qualified to speak about it. At the present time many papers were nothing but an assembly of other people's experiences and statements. Major Marshall's remarks about resuscitation had been particularly interesting. Dr. Morgan had found in civil practice that surgeons were apt to think of transfusion and resuscitation in terms of the giving of a single pint of blood. It was seldom that blood counts and hæmatocrit readings were made and the proper amount of blood to be given carefully estimated. Until that was done, anæsthetists would have to go on anæsthetizing patients who were not in a fit condition. Large quantities of blood and other fluids were necessary, and the amount could be judged only from the blood picture. Dr. Morgan was disappointed that so little had been said about "Pentothal"; perhaps supplies had been limited. Dr. Morgan had found that the bigger and tougher the patient, the better "Pentothal" was. He predicted a big future for it. "Pentothal" and oxygen anæsthesia was likely to be of great importance. Dr. Morgan endorsed the remarks of Major Marshall and Dr. Daly about "Carbogen". If "Carbogen" was used, it should be only under the supervision of some trained person, and it should be given intermittently, not continuously. Dr. Morgan had been interested to see the army pattern anæsthetic machine. He was more convinced than ever that the type of machine used in Australia—the closed circuit type—was one well suited to the type of anæsthesia used, and probably the best available in the world.

DR. C. N. PATON said that it was interesting and instructive to know how anæsthetists had overcome their various difficulties, and it was of value to have heard of their experiences. Anæsthetists in Australia were lucky that their supplies of drugs had been better than those of anæsthetists in theatres of war. If greater progress in anæsthesia had been made in the last three years in Australia than by men on active service, that was perhaps the explanation. "Pentothal Sodium" had a great future. Whereas in its early days it had been regarded as an induction agent and one for use in minor operations, at the present time it was used in a vast field of surgery. A great public demand for it had grown up, and this had to be satisfied. Dr. Paton had found it an ideal anæsthetic agent in cases complicated by severe shock. A little of it went a long way. He considered that the danger of sub-oxygenation with its use was over-emphasized, and the necessity of adopting appropriate counter measures under-emphasized. He thought that a number of complications previously thought to exist had been proved to be phantoms.

DR. GEORGE BELL said that he had been most interested in Major Marshall's remarks, particularly in those about the necessity for proper resuscitation. He wondered whether the lessons learnt in the last war had been rubbed in hard enough; but he was sure that Major Marshall would rub them in hard enough after this war. Dr. Bell had been interested in Flagg's can. During the last war a physiologist, Geoffrey Marshall, of Guy's Hospital, had made a similar contrivance with a billy-can; he had been able to keep two or three patients anæsthetized at once. Taylor and Marshall had obtained a series of good results in abdominal operations. They used nitrous oxide and oxygen anæsthesia with the injection of a local anæsthetic agent into the abdominal wall, and they gave blood transfusions with Kimpton's tube. Their patients did very well, as the result of careful resuscitation anæsthesia and blood transfusion. Dr. Bell was in entire agreement with what had been said about the necessity for adequate resuscitation. The case of severe abdominal injury quoted by Major Marshall was an example of what Dr. C. E. Corlette had taught for years—that such patients should be given time to recover. Dr. Bell thought that "Pentothal" must have been a great boon in forward areas. He asked whether Major Marshall had ever used chloroform. In the last war the most confident users of chloroform that Dr. Bell saw were certain orderlies who had been trained at Gallipoli. The evolution of the treatment of shock and the extension of the use of blood transfusion had been interesting developments in the present war.

Major Marshall, in reply to Dr. Morgan and Dr. Paton, who had spoken of the increased field for "Pentothal", said that that had been well and truly borne in on anæsthetists working overseas. The greatest difficulty was the lack of supply. Major Marshall had received only a small allowance of "Pentothal", and for three months he got none at all; it was reserved for forward areas. The next most useful thing in forward areas was ether. Many of the men used chloroform when they had no "Pentothal". Both drugs were easily portable, a great advantage. Major Marshall said that forward units had resuscitation measures "in full blast", and with the resuscitation they received the patients would stand almost any anæsthetic, whereas without resuscitation they often died. Chloroform and ether mixtures were used quite a lot for induction purposes, because the supply of ethyl chloride became very short. At times the ether was of unsatisfactory quality. At one stage a batch of ether was sent back to be tested, and the report was that it must not be used. For a time no alternative was provided, but later the deficiency was corrected. "Pentothal" had great scope; but it had to be given with great care to very ill patients and for long procedures, because prolonged narcosis might result, increasing the risk of lung complications. They had often used "Pentothal" overseas for induction of anæsthesia and nitrous oxide to continue it. "Pentothal" had to be used judiciously when it was necessary to open the abdomen. It sometimes gave less satisfactory results in robust patients than in those who were very ill. A strong, healthy man might require large quantities, even

if he was suffering from shock or was exsanguinated. Apparently katabolism was not much interfered with in such cases. Major Marshall said that much of what Dr. Paton had said was wrapped up in the ability of the anæsthetist. There was no doubt that a well-qualified person could take enormous liberties with "Pentothal" or anything else. "Pentothal" undoubtedly had an impressive future before it, provided that oxygenation was attended to. Dr. Paton had expressed the view that oxygenation did not matter much; Major Marshall assured those present that it did matter a great deal with all anæsthetic agents, and especially with "Pentothal". Referring to the technique of spinal anæsthesia, Major Marshall said that they had not often used the Etherington Wilson method; they had preferred a combination of Howard Jones's and Lake's technique. The position of the patients was carefully adjusted so as to secure an optimum distribution of the solution. The light "Percaine" solution was thus very useful for inducing unilateral anæsthesia. In reply to Dr. Bell, Major Marshall said that much had been learnt about shock in the last five years; the whole concept of shock had changed. The blood used for transfusion in forward areas was bank blood, from three days to a fortnight old, and the results were excellent.

DR. K. S. M. BROWN, from the chair, said that those present had been privileged to listen to the accounts of interesting experiences on active service. It was obvious that Major McCulloch and Major Marshall had done their work under great disadvantages; but they had through their ingenuity and resourcefulness done a good job for the men.

National Emergency Measures.

AMENDMENTS OF THE NATIONAL SECURITY (VENEREAL DISEASES AND CONTRACEPTIVES) REGULATIONS.

THE following amendments of the National Security (Venereal Diseases and Contraceptives) Regulations have been issued under the *National Security Act*, 1939-1940.

1. After regulation 2 of the National Security (Venereal Diseases and Contraceptives) Regulations, the following regulation is inserted:

"2A. Where the Minister is satisfied in respect of any State that the law in force in that State sufficiently carries out the objects of these Regulations (except regulation 12 thereof), the Minister may, by order published in the *Gazette*, declare that the provisions of these Regulations (except regulation 12 thereof) shall not apply in that State and thereupon those provisions shall not, so long as the order continues in force, apply accordingly."

2. Regulation 3 of the National Security (Venereal Diseases and Contraceptives) Regulations is amended—

(*a*) by omitting from paragraph (*f*) of the definition of "Chief Health Officer" the words "The Director of Public Health" and inserting in their stead the words "The Minister for Health"; and

(*b*) by inserting, after the definition of "Chief Health Officer", the following definitions:

"'Chief or other Commissioner of Police' includes any person for the time being exercising the functions of a Chief or other Commissioner of Police;

"'member of the Forces' means any member of the Defence Force of the Commonwealth or of the naval, military or air force of the United Kingdom or of any other part of His Majesty's dominions or of any Allied or other foreign force serving in association with His Majesty's armed forces;".

3. Regulation 4 of the National Security (Venereal Diseases and Contraceptives) Regulations is amended by inserting, after the word "person" (first occurring), the words "other than a member of the Forces".

4. Regulation 5 of the National Security (Venereal Diseases and Contraceptives) Regulations is amended—

(*a*) by omitting from sub-regulation (1.) all the words from and including the words "and bring him" to the end of the sub-regulation; and

(*b*) by inserting after that sub-regulation the following sub-regulations:

"(1A.) The constable effecting the apprehension of any such person shall forthwith notify the Chief Health Officer of the apprehension and the Chief Health Officer shall thereupon fix a time and place for the examination of such person by a legally qualified medical practitioner and advise the constable accordingly.

"(1B.) Any person so apprehended may be detained in a hospital or other suitable place appointed by the Chief Health Officer for the purpose, until the time appointed for the examination.

"(1C.) Any constable may bring any person so detained from the place of detention for examination at the appointed time and place and, if any such person refuses to submit himself for examination by a medical practitioner as and when required, the medical practitioner may, with such assistance as he thinks necessary, forcibly examine such person.".

5. Regulation 6 of the National Security (Venereal Diseases and Contraceptives) Regulations is amended by omitting the words "If any suspected person refuses to submit himself to medical examination as and when required, or if, on examination, he" and inserting in their stead the words "If, on examination, the suspected person".

6. After regulation 7 of the National Security (Venereal Diseases and Contraceptives) Regulations, the following regulation is inserted:

"7A. If any legally qualified medical practitioner in any State is satisfied that there are reasonable grounds for suspecting that any person in any place more than three hundred miles from the capital city of that State is suffering from venereal disease, the medical practitioner shall notify the nearest Police, Stipendiary or Special Magistrate of the name and address of the person so suspected and, thereupon, the Police, Stipendiary or Special Magistrate so notified shall have, and may exercise, in relation to that person, all the powers and functions of the Chief Health Officer under regulations 4, 5 and 6 of these Regulations, and those regulations shall apply to and in relation to any such person accordingly:

Provided that no person shall be detained by direction of a Police, Stipendiary or Special Magistrate under this regulation for any period longer than six weeks.".

7. Regulation 8 of the National Security (Venereal Diseases and Contraceptives) Regulations is repealed and the following regulation inserted in its stead:

"8. Notwithstanding anything contained in any law of the State, when a Chief Health Officer has notice that any member of the Forces is suffering from or is suspected to be suffering from venereal disease, the Chief Health Officer shall notify the Senior Administrative Medical Officer of the Service or Force to which the member is attached in the State in which the Chief Health Officer is functioning of the name of the member, together with such other particulars within the Chief Health Officer's knowledge as may establish the identity and address of the member.".

8. Regulation 10 of the National Security (Venereal Diseases and Contraceptives) Regulations is amended—

(*a*) by inserting, after the word "Officer", the words "Police, Stipendiary or Special Magistrate, medical practitioner,";

(*b*) by omitting the words "apprehension and" and inserting in their stead the words "apprehension, examination or"; and

(*c*) by inserting, after the word "apprehended", the word ", examined".

Correspondence.

ADVANCES IN THE PRESCRIBING OF PROFLAVINE.

SIR: The valuable antibacterial action of proflavine is being availed of so freely that the Australian production of this drug now exceeds the total pre-war imports of all acridine drugs including the highly toxic acriflavine which it has largely replaced. Although proflavine has a low systemic toxicity, the Pharmacopœia has unfortunately introduced it in the form of an acid sulphate, a substance as acidic as the bisulphate of quinine. Since only this pharmacopœial salt is available, we set out to discover how acid this would be in dilute solution and how this acidity may be remedied.

We find that a 0·1% solution of Proflavine Sulphate B.P. has a pH value of 2·5, as measured accurately with a glass electrode. This degree of acidity, which is almost as great

as that given by acriflavine, cannot fail to irritate delicate tissues.

It is a very simple matter to overcome this defect by ordering the conversion of the acid salt to the normal salt at the time of dispensing. For instance, a 0·1% aqueous solution may be prepared by warming one gramme of Proflavine Sulphate B.P. and 0·25 gramme of sodium bicarbonate with 40 millilitres of water until dissolved, and then diluting to a litre. This solution, which will be free from deposit provided pure materials have been used, is stable, and we find it has a pH value of 6·0, which is non-injurious.

A greaseless (neutralized) proflavine ointment may be prepared as follows. Proflavine Sulphate B.P. (0·1 gramme), starch (1·5 grammes), sodium bicarbonate (0·025 gramme) and water (50 millilitres) are rubbed smooth in a dish and then boiled over a small flame. Tragacanth (1·5 grammes) and glycerin (50 millilitres) are triturated together, the starch jelly added and the product adjusted to 100 grammes with water.

All "flavines" are decomposed by light and should be dispensed in brown containers. The formation of a deposit in a solution is evidence of inactivation.

Yours, etc.,

ADRIEN ALBERT.
WALTER GLEDHILL.

University of Sydney,
Sydney,
July 19, 1943.

THE FUTURE OF MEDICINE.

SIR: The future of medicine is a subject that must always be of interest to the medical profession. That it is of very great interest at the present moment is undoubted. However, there have been periods in the past when this subject has received more than ordinary consideration by the profession. One of these periods was after the last war. Even at that time the question of a nationalized medical service was being freely discussed. In view of the prominence being given at the present time to this particular form of medical service, it may be of interest to members of the profession to publish the following extract from a report on the future of medicine by a special committee appointed by the Council of the Victorian Branch in December, 1918, the members of the committee being Professor H. B. Allen, Dr. J. Ramsay Webb, Dr. Alex Lewers, Dr. L. S. Latham, Dr. J. H. L. Cumpston, Dr. J. Newman Morris.

The General Question of Nationalization.

The opinion of your committee on the general question of nationalization may now be shortly put:

In the first place, the Health Department of Victoria is in no condition to undertake the duties that would arise out of nationalization of the medical profession.

In the second place, the advantages claimed for nationalization can be very largely secured by other means.

In the third place, nationalization would, in the opinion of your committee, induce the following definite evils:

i. It would enfeeble the motives that induce men to attain excellence and would promote dull mediocrity in the mass of the profession.

ii. Even in the higher ranks of a nationalized profession, the consultants would be overworked and underpaid, and would tend to mediocrity of attainment in their grade.

iii. The poison so apt to attend bureaucratism would pervade the whole profession. A Prussian drill system would replace British liberty.

iv. The self-advertising doctrinaire and the sycophant would flourish.

v. Political influence would have far too great power.

vi. Progress would be clogged by departmental machinery.

vii. State medicine would be apt to assume intrusive tyrannical forms, and the character of its agents would correspondingly deteriorate.

viii. A lower type of candidate would come forward for entrance into the profession.

ix. The personal relations between doctor and patient would be weakened and destroyed. Choice of medical attendant would probably cease.

x. The voluntary hospitals would disappear as such, and the community would practically come under poor-law conditions, doubtless cloaked under fine titles.

The dangers that beset nationalization have become evident, and its advocates are loudly proclaiming that great care will be exercised to prevent undue bureaucratic administration and to safeguard members of the profession who elect to remain independent. Your committee regards such promises as illusory.

Nationalization would involve the concentration of enormous power in the hands of a few, possibly in the hands of one supreme administrative head, and the few or the one would not be chosen by the profession, but by politicians. The grave dangers that would ensue leap to the mind, and need no further exposition. Consultants and sanitary chiefs, members of the practising profession and health officers would all be more or less in bondage. Let all concerned consider well their present lot, and note the security that the independence of the profession gives, not only to the practitioners, but even to the officers of the various government departments associated with medicine. But the whole profession should remember that its independence and all its privileges are conditioned by efficient progressive generous discharge of duty. A policy of *laissez-faire* will not suffice.

Even apart from the question of nationalization, experience has shown that organization does not necessarily imply success. Disappointments and disillusion are frequent. The histories of infectious disease hospitals, of sanitoria, of anti-venereal campaigns, of liquor prohibition, are full of warnings against excessive trust in machinery. Enduring progress is usually gradual, and at its root has education rather than compulsion.

Yours, etc.,

J. G. HUNTER,
General Secretary, Federal Council of the British Medical Association in Australia.

135, Macquarie Street,
Sydney,
July 21, 1943.

MAGILL TUBES: A WARNING.

SIR: I wish to draw the attention of anæsthetists to a matter that may at any moment lead to a tragedy.

Today, I gave an anæsthetic to a patient to have some teeth extracted and, as is my usual practice in such cases, passed a Magill tube, Number 9, and packed off the hypopharynx.

There appeared to be some obstruction to respiration—difficult to explain with a large tube—but the resulting degree of cyanosis was overcome by connecting up an oxygen cylinder to the ether vaporizing unit.

A one-sixteenth inch wire stylet bent in a curve had been passed through this particular tube and left *in situ* during sterilization by boiling, yet no obstruction was noted in the lumen.

At the close of the operation the tube was withdrawn, and on examination it appeared to be blocked. On pushing a small brush through, a piece of smooth rubber, the size and shape of a date seed, was extruded. This almost completely blocked the lumen, but was freely movable and so slippery that it could quite easily have been blown into a bronchus.

On relating the above story to a colleague, he told me that a mutual medical friend had found a similar piece of rubber in a Magill tube. I then went through some new Magill tubes, of Australian manufacture, and in three out of six Number 10 tubes I found exactly similar pieces of rubber. Whether these plugs are put in during manufacture for some purpose, or are accidentally left in the tubes, I do not know, but they are extremely dangerous.

I would suggest investigation of any cases which have lately had such size tubes passed and have an unexplained post-operative pulmonary complication.

Steps are being taken to notify the manufacturers, but I would stress the urgency of investigating all such tubes by those accustomed to use them to determine the patency of the lumen.

Yours, etc.,

H. J. DALY, M.B., Ch.M., M.R.A.C.P.

143, Macquarie Street,
Sydney,
July 22, 1943.

THE REPORT OF THE PARLIAMENTARY JOINT COMMITTEE ON SOCIAL SECURITY.

SIR: With reference to the publication in your journal of July 17 of the Sixth Interim Report of the Joint Committee on Social Security, I should like to advise four corrections as under, which unfortunately did not appear on the advance copy forwarded to you.

In paragraph 38 the figure "5,492" should read "5,402".
In paragraph 79 (*e*) the figure "5" should read "82".
In paragraph 89 the word "four" should appear before "children" in the last line.
In paragraph 103, the twelfth line, the figure "2,439" should read "2,963".

Yours, etc.,
R. ROWE,
Secretary, Parliamentary Joint Committee on Social Security.

Canberra, A.C.T.,
July 22, 1943.

Australian Medical Board Proceedings.

QUEENSLAND.

THE undermentioned have been registered, pursuant to the provisions of *The Medical Acts*, 1939 to 1940, of Queensland, as duly qualified medical practitioners:

Knott, Leonard George, M.B., B.S., 1943 (Univ. Queensland), 117, Wilston Road, Newmarket, N.W.1.
Leggett, Ernest Lionel, M.B., B.S., 1943 (Univ. Queensland), Newman Avenue, Camp Hill.
Lethbridge, Flora Gwendoline, M.B., B.S., 1943 (Univ. Queensland), Marlborough Flats, Moreton Street, New Farm.
McIntyre, Angus Hugh Gordon, M.B., B.S., 1943 (Univ. Queensland), "Enville", 25, Llewellyn Street, Toowoomba.
McMurray, Basil Kenneth, M.B., B.S., 1943 (Univ. Queensland), 67, Lothian Street, Annerley, S.3.
Oxley, James Griffith, M.B., B.S., 1943 (Univ. Queensland), "Hine-Moa", 66, Wellington Street, Clayfield.
Palethorpe, Harold Powell, M.B., B.S., 1943 (Univ. Queensland), 7, Gentle Street, Toowoomba.
Robbins, Lincoln Hill Ski, M.B., B.S., 1943 (Univ. Queensland), 15, Upper Lancaster Road, Clayfield.
Robinson, Ray Dudley, M.B., B.S., 1943 (Univ. Queensland), Ruthven Street, Corinda.
Skerman, Bertram Stansall, M.B., B.S., 1943 (Univ. Queensland), Box 19, Post Office, Maleny.
Stable, Grantley Sheridan, M.B., B.S., 1943 (Univ. Queensland), "Saas Fee", Dennis Street, Indooroopilly.
Courtice, Brian Hooper, M.B., B.S., 1943 (Univ. Queensland), General Hospital, Brisbane.
Courtice, Robert, M.B., B.S., 1943 (Univ. Queensland), McLeod Street, Herston.
Phillips, Bertram James, M.B., B.S., 1943 (Univ. Queensland), Mareeba Road, Ashgrove.
Campbell, Clara, M.B., B.S., 1943 (Univ. Queensland), "Dahlow", Kidston Street, Clayfield.
Margulies, Ursula Beate, M.B., B.S., 1943 (Univ. Queensland), 600, Lower Bowen Terrace, New Farm, Brisbane.
Hart, Daniel Roberts Lloyd, M.B., B.S., 1943 (Univ. Queensland), 90, Oriel Road, Clayfield.
Kuner, Lea, M.B., B.S., 1943 (Univ. Queensland), 21, Aberleigh Road, Herston.

Obituary.

WILLIAM FRANCIS DIGGES LA TOUCHE.

DR. JOHN MAUDE has forwarded the following appreciation of the late Dr. William Francis Digges La Touche.

The death of Frank Digges La Touche brings to those of us who enjoyed the privilege of his friendship a gap in our daily lives. The richness of his geniality was supplemented by an unusually generous hospitality. The cheerfulness of his smile and his delightful chuckle were the outward signs of an overflowing happiness and vital accord with the world. It was difficult to realize the depths of feeling and sympathy that were hidden behind his characteristic expression: "It's just too bad." Its flippancy and accompanying chuckle misled many, and La Touche knew that he sacrificed something of himself in hiding away feelings that he thought would be an embarrassment to himself and those around him.

Born of Huguenot descent with a strong Irish admixture, he has left with us the memory of a lovable personality. He was generous, honest, loyal and modest. His enemies were few, his friends were legion.

DR. M. S. S. EARLAM writes:

The sudden and untimely death, as a result of illness contracted almost certainly in the course of his professional work, of William Francis Digges La Touche is one of those happenings for which the higher reason is difficult indeed to comprehend.

Graduating in 1917, Digges La Touche went overseas with the first Australian Imperial Force, returning in 1920. He was shortly afterwards appointed Superintendent of Bodington Red Cross Home, New South Wales, later commencing practice at Holbrook. He subsequently took over one of the oldest medical practices at Sydney, at 1, King Street, Newtown, where he followed his profession for some twelve years until his death. While at Newtown he was appointed to the honorary anæsthetic staff of the Royal Prince Alfred Hospital, and also held for some ten years the position of honorary medical officer to the New South Wales Schools for the Blind and Deaf, Darlington.

Men of his calibre, especially in these difficult days, are all too few. Though modest to the point of self-deprecation, he was an exceptionally able clinician, and added to his professional skill a broad, albeit not excessive, tolerance, generosity in all things and human kindness. As a comrade he was almost uniquely refreshing and stimulating. No untoward event ever outwardly depressed him, though at times for an unguarded moment his expression would reveal the cares with which he refused to burden his friends. Of particularly active disposition, he had a tremendous zest for life, gave and partook of hospitality with equal and gratifying relish, and most certainly derived more satisfaction and enjoyment from his life than many who reach their allotted span. His death leaves a gap which for his friends will not in this world adequately be filled.

Notice.

THE New South Wales Post-Graduate Committee in Medicine desires to announce that owing to unforeseen circumstances it has been necessary to cancel the week-end course at Lismore, which was scheduled to be held on Saturday and Sunday, August 7 and 8, 1943, in conjunction with the North Eastern Medical Association.

Corrigendum.

IN the issue of July 24 an article was published entitled "Amœbic Dysentery in the Northern Territory". This was stated to be by Major H. B. Fay and Captain Johnston. The first author's name is Major H. B. Kay. The error unfortunately was made in the typescript before it reached this journal. Two other errors arose in a similar way. In the acknowledgements, Lieutenant-Colonel J. B. Horan's name is incorrectly stated as "Moran", and in the section under "Treatment", in the last paragraph a dose of nine grains of sodium sulphate should read "sixty grains".

Nominations and Elections.

THE undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Hobson, David Lennox, M.B., B.S., 1943 (Univ. Sydney), Mater Misericordiæ Hospital, Crow's Nest.
Kerridge, John Charters, M.B., B.S., 1942 (Univ. Sydney), 50, Cheltenham Avenue, Cheltenham.

Orr, Robert Hargreaves, M.B., 1943 (Univ. Sydney), Royal Prince Alfred Hospital, Missenden Road, Camperdown.
Smith, Margaret Helen, M.B., B.S., 1943 (Univ. Sydney), St. George District Hospital, Kogarah.

Medical Appointments.

Dr. Samuel Pearlman has been appointed honorary ophthalmologist at the Mental Hospital, Parkside, South Australia.

Dr. Patrick Francis Vincent Crowe, in accordance with the provisions of *The Mental Hygiene Act* of 1938 of Queensland, has been appointed Acting Deputy Medical Superintendent, Toowoomba Mental Hospital, and Acting Visiting Medical Officer, Epileptic Home, Willowburn.

Dr. Herbert Harold Youatt has been appointed Government Medical Officer at Hughenden, Queensland.

Dr. Arthur James Kennedy, under the provisions of *The Workers' Compensation Acts*, 1916-1943, of Queensland, has been appointed a medical referee for the purposes of those acts.

Dr. John Kellerman Adey, under the provisions of the *Lunacy Acts* of Victoria, has been appointed Director of Mental Hygiene (acting).

Books Received.

"Micrurgical and Germ-Free Techniques: Their Application to Experimental Biology and Medicine: A Symposium", edited by James A. Reyniers; 1943. Springfield: Charles C. Thomas; London: Baillière, Tindall and Cox. 9¼" × 5¾", pp. 286, with 94 figures and 17 tables. Price: $5.00.

"First Aid", by Frits Kahn, M.D.; Second Revised Edition; 1942. New York: I See Books Company. 9¾" × 7¼", pp. 56, with many illustrations. Price: 3s. 6d.

"The Adelaide Children's Hospital Pharmacopœia"; Third Edition; 1942. Adelaide: The Adelaide Children's Hospital, Incorporated. 5½" × 3¾", pp. 181. Price: 7s.

"Blood Groups and Transfusion", by Alexander S. Wiener, A.B., M.D.; Third Edition; 1943. Springfield: Charles C. Thomas; London: Baillière, Tindall and Cox. 10" × 6¼", pp. 457, with 69 figures and 106 tables. Price: $7.50, post paid.

"Addled Art", by Lionel Lindsay; 1942. Sydney and London: Angus and Robertson, Limited. 9¼" × 7¼", pp. 81, with illustrations. Price: 7s. 6d.

"Physiology in Aviation", by Chalmers L. Gemmill, B.S., M.D.; First Edition; 1943. Springfield: Charles C. Thomas; London: Baillière, Tindall and Cox. 8½" × 5½", pp. 136, with 18 figures and 18 tables. Price: $2.00, post paid.

"The Australian Army Medical Services in the War of 1914-1918", by Colonel A. G. Butler, D.S.O., V.D., B.A., M.B., Ch.B.; Volume III; 1943. Canberra: Australian War Memorial. 8½" × 5½", pp. 1123, with 85 illustrations, graphs and diagrams. Price: 21s.

"Clinical Roentgenology of the Cardiovascular System", by Hugo Roesler, M.D., F.A.C.P.; Second Edition; 1943. Springfield: Charles C. Thomas; London: Baillière, Tindall and Cox. 10" × 6¼", pp. 497, with 337 figures. Price: $7.50.

"Teaching in Schools of Nursing", by Alice M. Jackson, M.A., and Katharine F. Armstrong, D.N., S.R.N., C.M.B. Certificate, with an Introduction by Cyril L. Burt, M.A., D.Sc.; Second Impression; 1943. London: Faber and Faber, Limited. 7" × 4¾", pp. 262. Price: 7s. 6d. net.

"J. F. Sutherland's First Aid to Injured and Sick", revised and rewritten by Halliday Sutherland, M.D.; Forty-fifth Edition; 1943. Edinburgh: E. and S. Livingstone. 4½" × 2¾", pp. 77, with 46 diagrams, one coloured. Price: 9d. net.

"Home Guard Medical Manual: You and Your Comrades: Front Line Treatment of Wounds", by the Medical Officer to Midlothian Battalion, Home Guard; 1943. Edinburgh: E. and S. Livingstone. 4" × 2¾", pp. 31. Price: 4d.

"The Practice of Refraction", by Sir Stewart Duke-Elder, M.A., D.Sc., Ph.D., M.D., Ch.B., F.R.C.S.; Fourth Edition; 1943. London: J. and A. Churchill, Limited. 8½" × 5½", pp. 340, with 183 illustrations. Price: 15s.

"Training for Childbirth: From the Mother's Point of View", by Minnie Randell, S.R.N., S.C.M., T.M.M.G.; Third Edition; 1943. London: J. and A. Churchill, Limited. 8½" × 6½", pp. 131, with 128 illustrations. Price: 10s. 6d.

"The Nervous Soldier: A Handbook for the Prevention, Detection and Treatment of Nervous Invalidity in War", by John Bostock and Evan Jones; 1943. Brisbane: University of Queensland. 7" × 5", pp. 96.

"Physiological Principles in Treatment", by Sir Walter Langdon-Brown, M.A., M.D., Hon.D.Sc., F.R.C.P., Hon.LL.D., Hon.F.R.C.P.I., and Reginald Hilton, M.A., M.D., F.R.C.P.; Eighth Edition; 1943. London: Baillière, Tindall and Cox. 8¾" × 5¾", pp. 331. Price: 12s. 6d.

"Aftereffects of Brain Injuries in War: Their Evaluation and Treatment: The Application of Psychologic Methods in the Clinic", by Kurt Goldstein, M.D., with a Foreword by D. Denny-Brown, M.D.; 1942. London: William Heinemann (Medical Books) Limited. 8½" × 6", pp. 244, with illustrations. Price: 21s. net.

Diary for the Month.

Aug. 3.—New South Wales Branch, B.M.A.: Organization and Science Committee.
Aug. 4.—Victorian Branch, B.M.A.: Branch.
Aug. 4.—Western Australian Branch, B.M.A.: Council.
Aug. 5.—South Australian Branch, B.M.A.: Council.
Aug. 6.—Queensland Branch, B.M.A.: Branch.
Aug. 10.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
Aug. 10.—Tasmanian Branch, B.M.A.: Branch.
Aug. 13.—Queensland Branch, B.M.A.: Council.
Aug. 17.—New South Wales Branch, B.M.A.: Ethics Committee.
Aug. 18.—Western Australian Branch, B.M.A.: Branch.
Aug. 19.—New South Wales Branch, B.M.A.: Clinical Meeting.
Aug. 24.—New South Wales Branch, B.M.A.: Medical Politics Committee.
Aug. 25.—Victorian Branch, B.M.A.: Council.
Aug. 26.—New South Wales Branch, B.M.A.: Branch.
Aug. 27.—Queensland Branch, B.M.A.: Council.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phœnix Mutual Provident Society.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this journal. The management cannot accept any responsibility unless such a notification is received within one month.

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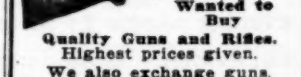

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REPATRIATION COMMISSION.

VACANCY FOR MEDICAL OFFICER.

Applications are invited for appointment to a newly created position of Medical Officer at the Queensland Branch Office of the Repatriation Commission, Brisbane.

The appointment will be on probation for a period of six months and salary is subject to cost of living adjustments. The existing salary range is:

£760 per annum—on commencing duty.
£796 per annum—second year.
£832 per annum—third year.
£868 per annum—fourth year.
£904 per annum—fifth year.
£952 per annum—sixth year.
£1,000 per annum—seventh year (maximum).

Increments within the range are subject to satisfactory service and to the nature of the duties justifying the increases.

On confirmation of appointment, the appointee will be required to make contributions under the Superannuation Act.

Applicants should state whether they are married or single, their age, war service (if any), and should forward copies of testimonials. The successful applicant will be required to meet the cost of his transportation to Brisbane, and private practice will not be allowed.

Applications should be lodged not later than Saturday, 28th August, 1943, with the Deputy Commissioner for Repatriation in the capital city of the State in which the applicant resides.

REPATRIATION COMMISSION.

VACANCIES FOR MEDICAL OFFICERS.

Applications are invited for appointment to the positions (two) of Resident Medical Officer, Prince of Wales Repatriation General Hospital, Randwick, Sydney.

The appointment will be on probation for a period of six months and salaries are subject to cost of living adjustments. The existing salary range is:

£760 per annum—on commencing duty.
£796 per annum—second year.
£832 per annum—third year.
£868 per annum—fourth year.
£904 per annum—fifth year.
£952 per annum—sixth year (maximum).

Increments within the range are subject to satisfactory service and to the nature of the duties justifying the increases.

On confirmation of appointments, the appointees will be required to make contributions under the Superannuation Act.

Single quarters and rations are available, and a deduction of £104 per annum will be made for these. However, if the appointees desire to reside away from the institution, and it can be arranged, the deduction will not be made.

Applicants should state whether they are married or single, their age, war service (if any), and should forward copies of testimonials. Successful applicants will be required to meet the cost of their transportation to Sydney, and private practice will not be allowed.

Applications should be lodged not later than Saturday, 28th August, 1943, with the Deputy Commissioner for Repatriation in the capital city of the State in which the applicants reside.

REPATRIATION COMMISSION.

Applications are invited from qualified medical practitioners for the position of Visiting Physician to the Repatriation General Hospital, Caulfield, and to the Macleod Repatriation Sanatorium, Melbourne. Remuneration will be at the rate of £450 per annum. Applications, which should state age and include particulars of experience and war service (if any), should reach the Acting Deputy Commissioner for Repatriation, 615 Elizabeth Street, Melbourne, not later than 14th August, 1943. Full conditions of the appointment may be obtained from the Acting Deputy Commissioner at his office.

J. WEBSTER, Acting Chairman, Repatriation Commission.

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Wholly set up, printed and published at the Printing House, Seamer Street, Glebe, Sydney, N.S.W., by ARTHUR FREDERICK ROOTS SIMPSON, of Fairholm Street, Strathfield, New South Wales, on behalf of the AUSTRALASIAN MEDICAL PUBLISHING COMPANY LIMITED, Seamer Street, Glebe, Sydney, New South Wales.